l. 144, No. 3 March, 1936 Price 25c

AMERICAN GAS JOURNAL

CURTAIN GOING UP!

ON THE BIGGEST SHOW EVER STAGED BY

ROBERTSHAW

TO SELL ROBERTSHAW OVEN-HEAT-CONTROL-EQUIPPED RANGES

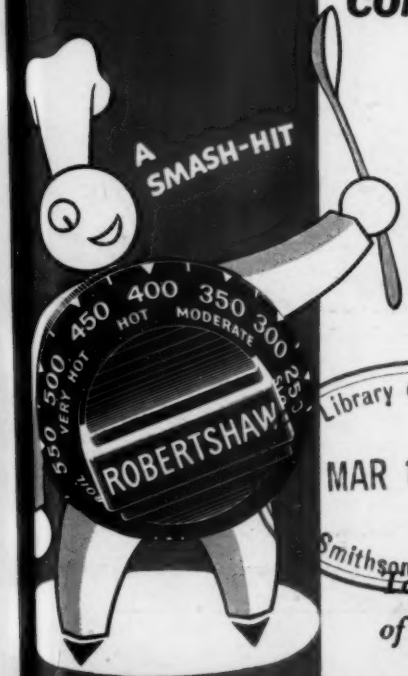
COMING! COMING! COMING!

MAY 4TH TO 9TH

A NATION-WIDE, NATIONALLY-ADVERTISED

MEASURED COOKING WEEK

To sell women the country over on the advantages of oven-heat-control—to put Robertshaw-equipped modern gas ranges squarely in the spotlight



ACT 1 *Presenting* a campaign in Collier's, featuring Measured-Cooking Week, dramatizing Robertshaw's big role in modern cookery

ACT 2 *Presenting* a big $1,000.00 prize-contest to home service directors for best one-week demonstrations on Robertshaw-equipped gas ranges

ACT 3 *Presenting* a big newspaper mat service urging gas company customers to come and learn better cooking—on Robertshaw-equipped ranges

ACT 4 *Presenting* a complete newspaper mat service planned to bring prospects in to retailers during Measured-Cooking Week

Come in! Come

EQUIP YOUR

WITH ROBERTSH

OVEN-HEAT-CON

Brilliant showm by Robertshaw first Measured-Co Week! National ad tising that will pu Robertshaw-equip range in top-spot every main street country! Don't miss big selling drive! for details!

ROBERTSHAW THERMO
COMPANY
YOUNGWOOD, PENN.

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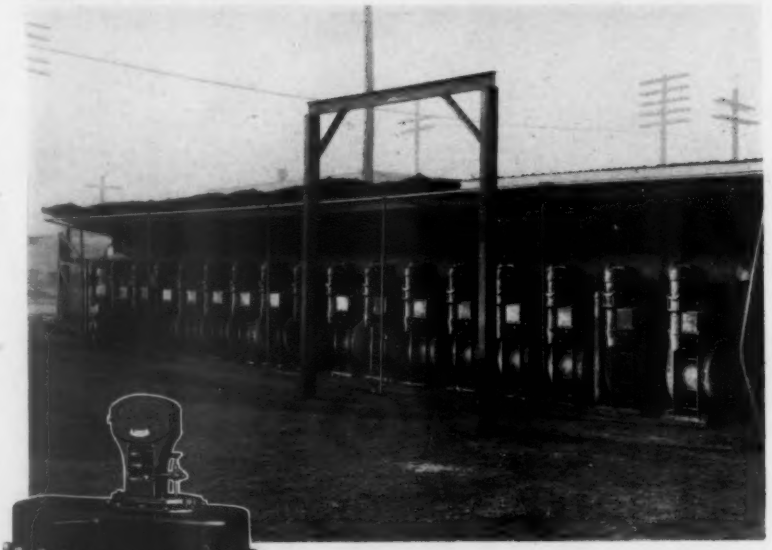
Here's what we mean by *Low Maintenance Cost for* EMCO

LARGE CAPACITY PRESSED STEEL METERS

A midwest gas company installed two batteries of EMCO No. 5 Pressed Steel Large Capacity Meters in different departments of a steel plant in 1928. One service—an all on or all off load several times per hour—was a severe usage, but after each meter had measured about 200,000,000 cu. ft. of gas, the repair cost was only approximately 13 cents per million cu. ft.

The other battery of meters, with a steady load, each meter measured over 300,000,000 cu. ft. of gas with a repair cost approximating only 3 cents per million cu. ft.

EMCO'S correct engineering and design principles, quality raw materials, modern manufacturing facilities and equipment, and skilled workmanship make possible this reliability and low maintenance cost with accuracy in measurement.



Battery of EMCO Pressed Steel Meters Measuring Gas Used By a Midwestern Steel Company

EMCO Large Capacity Meters, fitted with the EMCORECTOR, give an accurate, direct reading of volume corrected to any base pressure, and eliminate the time and expense involved in making chart calculations

PITTSBURGH EQUITABLE METER CO.

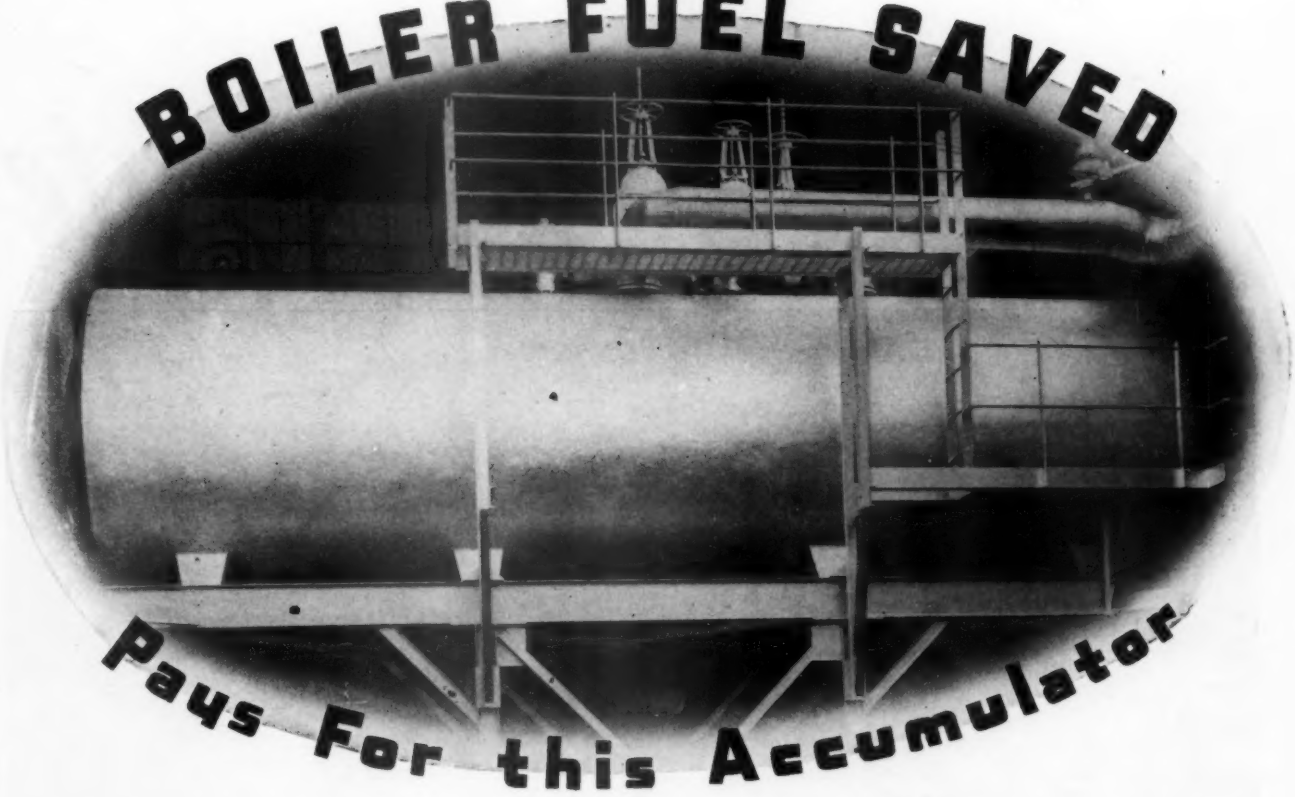
MERCO NORDSTROM VALVE CO.

MAIN OFFICES PITTSBURGH, PA

NEW YORK	LOS ANGELES	TULSA	HOUSTON	MEMPHIS	BUFFALO
COLUMBIA	KANSAS CITY	CHICAGO	PHILADELPHIA	ATLANTA	OAKLAND

Entered as Second Class Matter

BOILER FUEL SAVED



Pays For this Accumulator

EVERY water gas plant operator not now recovering exhaust steam and utilizing it in the gas making process should ask us for a calculation of savings made possible by installing the New Semet-Solvay Steam Accumulator.

■ This unit, by conserving steam used to drive blowers and other auxiliaries, saves from 3 to 5 pounds of boiler fuel per MCF of gas made. The capital cost of the installation is returned in a relatively short time and the investment produces a substantial net saving thereafter.

■ Promptly on receipt of the necessary data, we will submit a calculation and proposal which will show how important this opportunity to economize will be for your plant.

Features THAT AN INSTALLATION OF THE NEW SEMET-SOLVAY STEAM ACCUMULATOR OFFERS:

Streamlined baffles assure unusually effective mixing of steam and water.

The system is designed for the delivery of dry steam.

The accumulator can be built to fit any plant capacity and operating requirement.

Operation is entirely automatic.

The accumulator can be located out of the way.

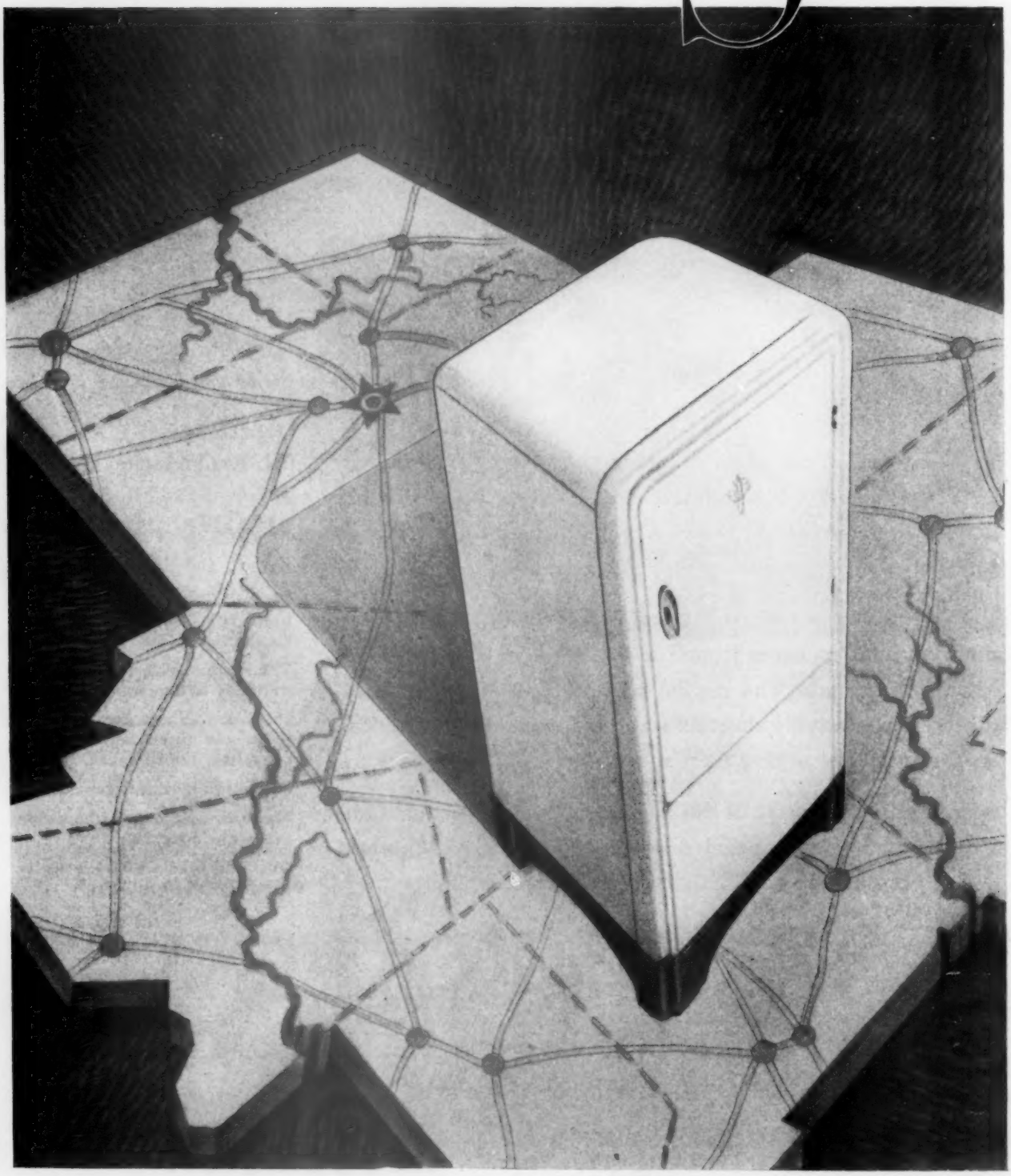
One unit will service a series of water gas machines.

SEMET-SOLVAY
ENGINEERING CORPORATION

Engineers *Contractors*

40 RECTOR ST. NEW YORK, N. Y.

A 49th State



was added last year

totalling

2½ MILLION MCF

CONGRESS didn't debate its entrance into the Union. Newspapers didn't carry a word about it. Yet in 1935, so far as the gas industry was concerned, the equal of a new state the size of Nebraska or Washington was added to the nation's total gas consumption.

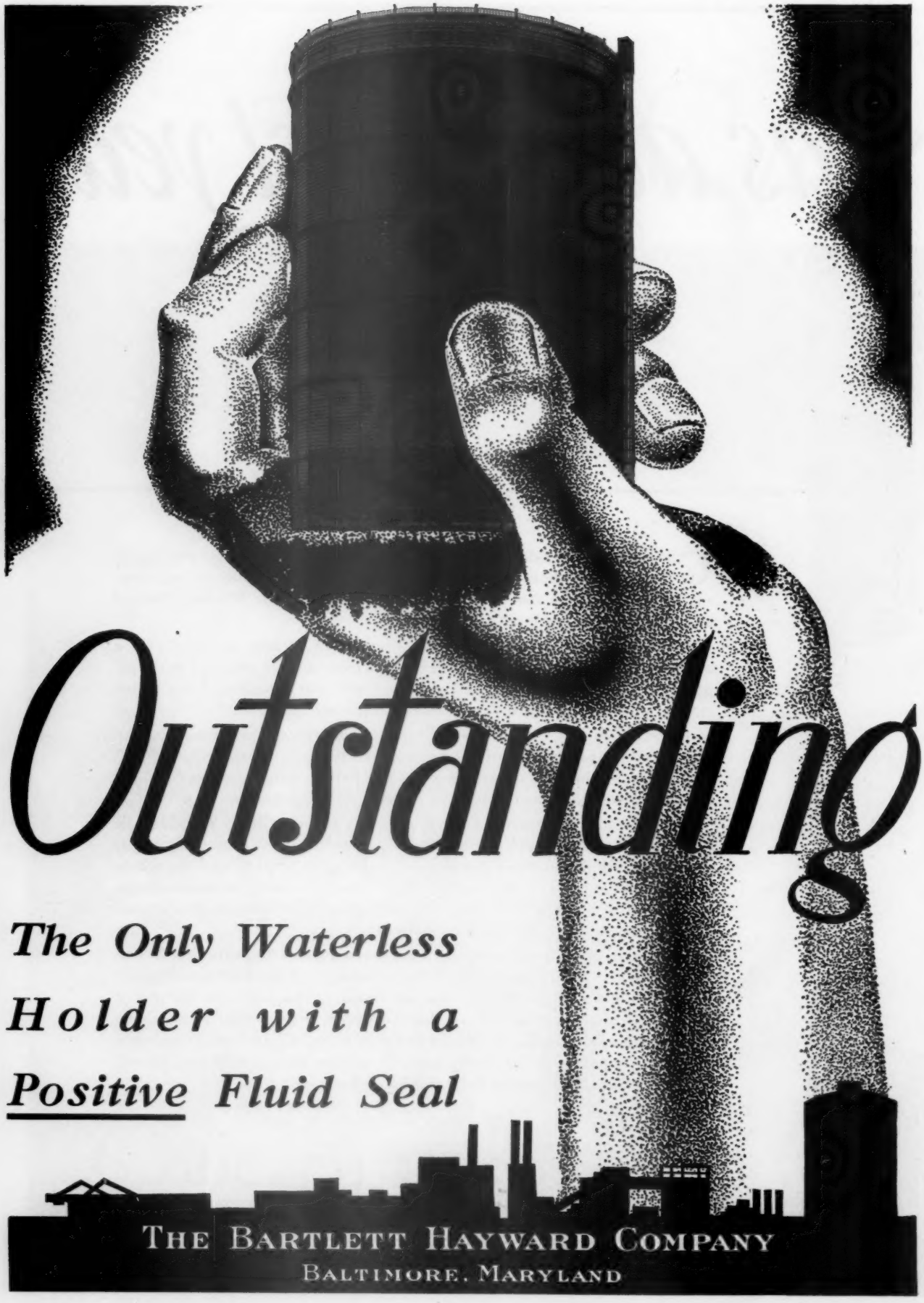
This 49th state was not the result of opening up new territory. Not a single penny of plant outlay or maintenance expense was required to supply gas to it. The whole new and valuable load which it contributed was added simply, permanently, by the installation of gas refrigerators.

During this single year, gas refrigeration increased the annual load of the gas companies of America by more than two and a half million MCF. And, increased load was only one—though vitally important—benefit which accrued to the gas industry through the sale of refrigerators.

Superior in performance and convenience to other types of automatic refrigerator, every gas refrigerator installed publicizes the modernity of gas as fuel . . . builds customer good-will for the gas company and the whole gas industry. It protects the cooking load, too, by helping to insure all-gas kitchens. And because of the satisfaction it gives, gas refrigeration creates new interest in other gas-using appliances.

This year offers *your* company a not-to-be-missed opportunity to win *more* homes to gas refrigeration. Take advantage of the ever-growing acceptance of gas refrigeration . . . take advantage of the big sales features of the new and finer Electrolux . . . to *March to Leadership with Gas Refrigeration* in your community during 1936! For our part, we offer fullest merchandising and sales cooperation—just write and tell us how we can help you. Servel, Inc., Electrolux Refrigerator Sales Division, Evansville, Ind.

New Air-Cooled **ELECTROLUX**
THE SERVEL *Gas Refrigerator*


Outstanding
The Only Waterless
Holder with a
Positive Fluid Seal
THE BARTLETT HAYWARD COMPANY
BALTIMORE, MARYLAND

Service lines that help you give *REAL SERVICE*

THE clean, smooth interior surface of NATIONAL Scale Free Pipe is a big aid to gas companies who value their reputation for service and who scrutinize their piping costs.

There is no scale in this pipe to come loose and clog small orifices, your delicate meters or otherwise harm your service. The scale is removed mechanically by a special Scale Free Process, (butt weld sizes ½" to 3"). Other outstanding advantages are full delivery capacity, less friction loss, greater strength at the weld. Added corrosion resistance, particularly against pitting, is given by the Spellerized treatment.

When you order standard pipe for service lines, specify NATIONAL Scale Free Spellerized and be sure of the maximum in performance and economy. Large use by shrewd buyers, continued for many years, has made it America's Standard Wrought Pipe.

CHROMATE TREATMENT—ALL NATIONAL Galvanized Pipe is given a special chromate treatment to resist discoloration and the formation of white rust. This patented process preserves that smooth, glistening surface or metallic lustre which is characteristic of good galvanizing.

NATIONAL TUBE COMPANY · PITTSBURGH, PA.

Pacific Coast Distributors: Columbia Steel Co., San Francisco
Export Distributors: United States Steel Products Co., New York City

UNITED STATES STEEL

Positive Safety FOR GAS BURNERS WITH THE NEW

MINNEAPOLIS HONEYWELL

Pilotstat

The Pilotstat is available in three models — the Straight Valve (shown above) the Angle Valve, both ⅜ inch to 1¼ inch sizes, and the Electric Switch model, for use with motor valve controls. Supplied with 30 inch standard length thermo-couple. Other lengths available to fit any appliance.

Bunsen Pilot Tip should be ordered with Pilotstat. Available in models to meet individual requirements of all burners.

EMBODIES THE ACCEPTED *Electric Thermo-Couple* PRINCIPLE

THE new Minneapolis-Honeywell Pilostat takes advantage of the proved and accepted electric thermo-couple principle to provide an automatic and positive safety shut down for gas burners. The thermo-couple, placed in the small pilot flame, generates sufficient current to keep the gas valve open. Should the pilot fail, the current stops, releasing the magnetically held armature, and a heavy spring snaps the valve shut. The Pilostat is remarkably simple, with no moving parts—nothing to wear, fatigue, or get out of order. It is truly dependable and affords positive protection and safety, day in and day out, against failure of gas burner ignition. Minneapolis-Honeywell Regulator Co., 408 East 28th St., Minneapolis, Minnesota. Branches in all principal cities

MINNEAPOLIS HONEYWELL

CONTROL SYSTEMS

BROWN INSTRUMENTS FOR INDICATING, RECORDING AND CONTROLLING

VOLUME 143,
NUMBER 3

AMERICAN GAS JOURNAL

Established 1859

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NUMBER 3747

MARCH, 1936

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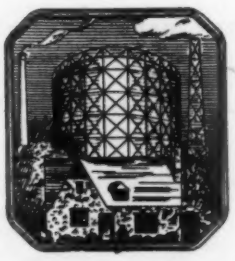

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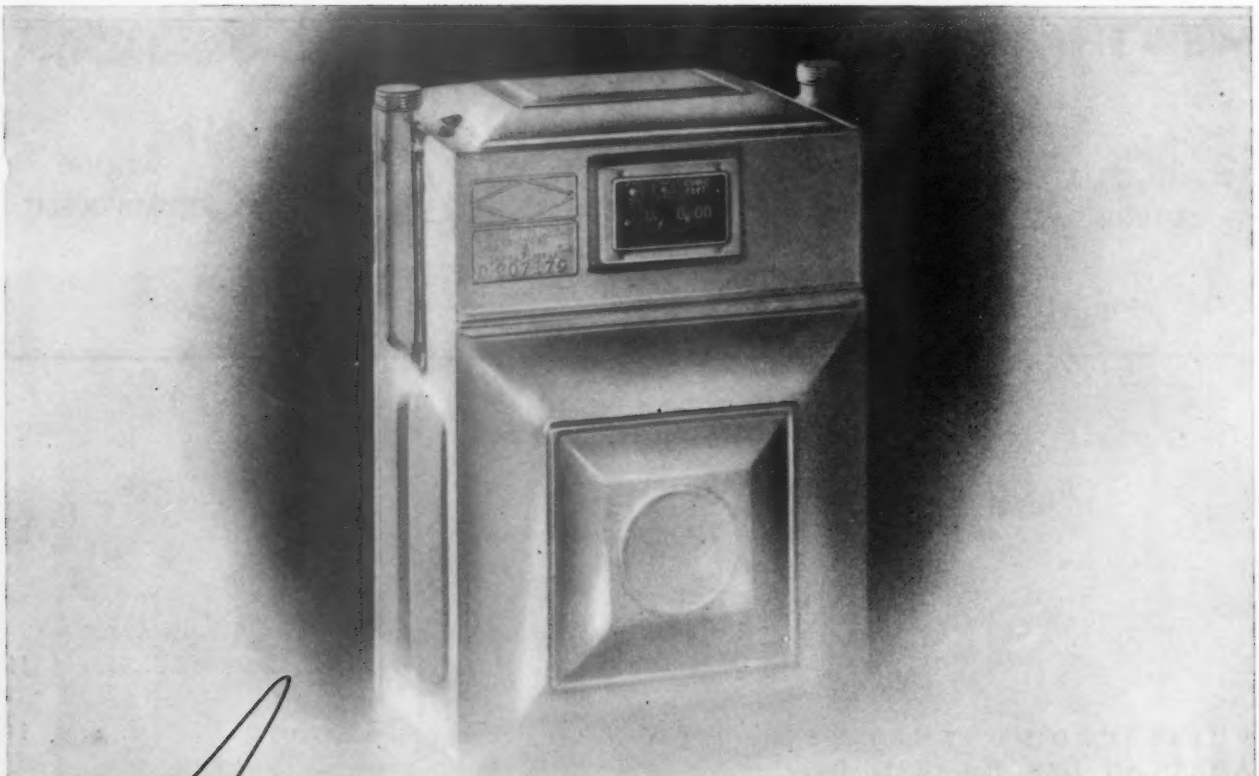


Accuracy

". . . . it represents our base point of reference in considering meter performance. The meter stands as sole arbiter of the customer's and company's interests. Accurate equipment imposes a fair charge on the customer and yields a corresponding revenue to the company. In the event of a dispute, correct meter registration is a most effective agent in the hands of the company. The meter continuously resides on the customer's premises, and monthly it touches his pocketbook. In the fullest sense it is the outpost of public relations."

From "Factors and Trends in Meter Maintenance", a paper presented before the A. G. A. Distribution Conference at Cleveland, Ohio, May 2-4, 1935.

AMERICAN METER COMPANY
INCORPORATED
Measurement and control of Gas, Oil, Steam, Air and Liquids
GENERAL OFFICES: 60 EAST 42nd STREET, NEW YORK, N.Y.

AMERICAN METER CO. MEASUREMENT ENGINEERS CENTENNIAL 1836-1936

341

MARCH
1936

AMERICAN GAS JOURNAL

VOLUME 144
No. 3

Rehabilitating a Small Manufactured Gas Company

Ralph Gibson, Manager
Van Wert Gas Light Co., Van Wert, Ohio

WHAT is to become of the small manufactured gas companies? Can they be restored to a profitable basis of operation or are they doomed to fall before competitive priced fuels?

Many small companies throughout the country have discovered pretty tough going the last few years and operators are wondering if there will be any life left after a few years.

Those companies that have been alive and alert to plug the hole left where the lighting load once existed, are probably in a more favorable position than those who permitted the situation to drift into a tightly drawn line of subsistence.

New markets and load development are not very accessible in a small town. Is it possible therefore to place sufficient new and additional equipment in homes of existing customers to produce a sufficiently high saturation per customer and thereby build back revenues to show profitable operation?

After our year's experience in connection with the Van Wert Gas Light Company, Van Wert, Ohio, we look upon the problem of rehabilitation with more confidence and encouragement.

What happened in the case of the Van Wert Gas Light Company, perhaps, is characteristically true of most manufactured gas plants in small towns. Tersely stated, a tremendous loss in business occurred in the past ten years and a very bitter public has developed a habit of using gas service in a most frugal manner. A large percentage of customers have gone over to competitive fuels, usage per customer is unusually low; public acceptance is unfavorable; a personnel depreciation is consonant with the general disintegration of the entire situation, and all the diseases common to a defunct business.

RALPH GIBSON

The Van Wert Gas Light Company, more than fifty years old, manufactures and distributes 560 B.T.U. Carbureted water gas in the city of Van Wert, Ohio. The population of the city has shown little growth over a long period of time and at the present has a population numbering 8,500 people. The city is a progressive, civic-minded municipality with some claim to national importance. Its prosperity, or lack of it, depends upon the rich agricultural territory adjacent to the city. Although not located in a strategic position with respect to commerce, Van Wert is located in the wealthiest county, per capita, in the state of Ohio. The number of families receiving relief in the community is average. Therefore, the economic conditions of the community suggest that a manufactured gas company should be made to operate profitably now as it did some ten years ago.

Yet the picture has changed. Revenues and customers no longer compare favorably with the business of ten years ago as shown in the table below:

	Customers	Sales MCF	Revenue
1920	1784	29,000	$62,000
1934	1318	16,000	38,000

During the above period, the city engaged the company in constant litigation, involving a $2.50 gas rate. What the customers thought of gas service is pictured strikingly in the above table. As customers became quite dissatisfied with the rates and general character of service, competitive priced fuels lured over 466 of our customers. We discovered later, and perhaps too late, that recovery of such business was made practically impossible, because more modern competitive applications were going into market for our business.

At a time when revenues were scarcely covering bare operating expenses, a rate reduction was offered in August, 1934, in accordance with

the following schedule:

2.25 per thousand for the first thousand cubic feet.
1.80 per thousand for the next thousand cubic feet.
1.50 per thousand for all over two thousand cubic feet.

Optional Water Heating and Refrigeration rate:

1¾c per cubic foot hourly demand.
1.25 per thousand for the first 1500 cubic feet.
1.00 per thousand for the next 3500 cubic feet.
.80 per thousand for all over 5000 cubic feet.

At the time the rate reduction became effective, a change in management occurred, and we found ourselves in charge of the situation.

The new rates occasioned an immediate loss of $7,000.00 in annual revenues, or 20% of our gross. This called for a rapid development program to absorb even the rate cut. The conditions affecting such a program looked almost insurmountable. How could any appreciable progress be made in rehabilitating the company to its once favored standing? We were faced with severe adverse public opinion. Many customers had decided definitely to get along without us in our small town where potential business was so definitely measured in terms of domestic usage.

We hear a lot of conversation about how Pumpkin Center or Podunkville depreciated into the depths of red ink and—presto-changeo—with miraculous effort, is virtually raised into a halo of prosperity. In our opinion, such stories lose credence with thinking men in the industry. Very much like Grape-Nuts, "There is always a reason." We do not sit on the exalted seat of prosperity. The past twelve months' performance indicates we are progressing in the right direction, employing a program and ideas probably used commonly in situations requiring aggressive action to stem the tide of impending losses. The business we have recovered and the progress we have made in a year's time is attributable to employment of these commonly used programs, fundamental in the design to rehabilitate a small gas company.

An indication of the public's opinion of gas usage and service prevailing up to recent date is set forth clearly in a series of monthly pamphlets under the name, "Ink Spots," circulated by a local printer in our town.

COPIED FROM OCTOBER, 1931, ISSUE OF "INK SPOTS"

"Stickemup!

"Van Wert is a good town, there is not much need to argue about that. The cost of living here is reasonable, it compares favorably with the vast majority of cities of similar size. There is, however, one commodity which we, in Van Wert, are forced to buy which is absurdly high in price. This commodity is none other than gas.

"The price we pay was forcibly brought to our attention by the recent gas controversy in the city of Toledo. They finally settled matters there by fixing a price of 75c for the first thousand cubic feet and 50c for each additional thousand. We pay $2.50 per thousand with no reduction on additional quantities. It is said that ours is the highest gas rate in Ohio.

"The rate which we pay is so high that even the most wealthy citizens do not dream of burning gas constantly in water heaters. If they wish such continuous service, they are forced (economically) to install heaters which burn only when water is being used. Gas for domestic heating is unheard of here. It's little wonder that many people are tearing out gas ranges and installing electric outfits. The Ohio Power Company has made reductions in their rate for this purpose. They have profited by the experience of others and realize that the proper way to increase use and volume is to reduce price.

"It is time that the city of Van Wert wakes up and demands lower gas rates. It doesn't make any particular difference to users whether the gas is natural or artificial. If the company which controls our local gas outfit doesn't care to give us fair treatment, let's invite some natural gas concern to run a line here. There must be some relief—why not get it now?"

COPIED FROM AUGUST, 1932, ISSUE OF "INK SPOTS"

"Now we are back on familiar territory. This gas company which charges us such generous gas rates is a bit like the government, they don't know when to get off the people's neck. Ink Spots has squawked and squawked about our gas rates (don't forget—$2.50 per thousand feet) and it didn't do any good. We didn't think it would. The company didn't pay any attention to our tirades—why should they—they are getting the dough, and the city administration didn't pay any attention either—why shouldn't they—they are getting paid for taking care of our interests.

"But now, old pal, here is something you can do to make the gas outfit go walking down the street talking to themselves. It is not original with us—but it's a darned good idea just the same. Being disgusted with paying from $5.00 to $8.00 each month for gas, Mrs. Ink Spots agreed with us that something must be done. We went to our friend Dick at the Gunsett Store and bought ourselves an oil stove. ($12.50 on account.) We proceeded to take Mr. Stove home and put him right alongside the Gas Company Gold Mine. There he sets, and as near as we can read the gas meter he will save about one-half or more of the monthly tribute to the Power Barons.

"So we suggest that you buy yourself an oil or gasoline stove, that can be purchased for from $5.00 to $39.50. Your oil costs are insignificant. A cheap one-holer will do most of your cooking—a two-holer is better if you do much washing.

"We said this idea isn't original—it isn't—and believe us lots of folks who can afford the gas are doing it as a protest against the high rates.

"P.S. Mrs. Ink Spots says she would rather cook with oil, if that will help you any."

This opinion was indicative and representative of what most people thought of us. It has been amplified and kept alive in bridge club meetings, whisperings across the back fence, and newspaper articles. The resultant effect was in the nature of a general boycott.

In the plan of rebuilding a business, it is quite important that the fellow who butters our bread—the customer—must like us and our service. When we prepared to effect a program of business recovery, we made an intensive effort through employee contacts to sell the new rates, resell the company and our service—first to the key men in the city, and then to our customers. This program, in view of a lowered employee morale, required a comprehensive training program, designed to inform and inspire employees to a good job of making friends for the company.

Much has been written on the subject of employee selling and employee education, its importance, success or possibilities. To me, this has been a definite contributing factor in the progress we have made. The employee has not only imparted the necessary information to our customers, but he has become more valuable as an employee in his particular job as a result of this training. Particularly effective have been our weekly educational meetings at which we have used charts and graphic illustrations to point out the need for help from everyone in the organization.

It has been a revelation to watch these employees "bird-dog" new prospects—the same employees who have served in their routine jobs averagely over twenty years, fired up and enthusiastic to recover the same customers who had delighted in condemning them for the same period of years. The efforts directed toward employee education are pleasingly compensated by the improvement in public sentiment and the amount of business recovered and developed.

A statement from the same printer who had so many damaging things

to say about us in his Ink Spots pamphlet is an excellent tribute to our improved public relations:

"December 13, 1935

Van Wert Gas Co.,
Van Wert, Ohio
Attention of Mr. Ralph Gibson, please,
Dear Mr. Gibson,

It might be fitting to take notice of a changed attitude on the part of the public in this city relative to the Gas Company. This attitude which was, several years ago, definitely hostile has softened to a point where the people are cognizant of the difficulties you are experiencing and are patiently standing by during their solution.

The improvement of gas appliances and company attitude and service is a factor which materially influences this era of better feeling. Nor to be ignored are the attacks by the administration on utilities. These are of such a nature that all fair minded citizens are forced to come to the aid of the utilities in the preservation of American Institutions.

Sincerely yours,
Robert A. Wilkinson"

A statement from the editor of a local newspaper, formerly unfriendly to us, also shows a changed attitude:

"December 13, 1935

Mr. Ralph Gibson, Manager,
The Van Wert Gas Light Co.,
Van Wert, Ohio
Dear Mr. Gibson:

In homes of two or three friends I have visited recently I noticed fine new gas ranges brightening up the kitchens. Automatic gas heaters seem about as popular a subject for conversation as bridge or politics.

A year ago I was spending practically nothing for gas to heat water in my home. By some hook or crook you got me to tear the pipes out of my furnace and buy gas instead.

Doggone you! It seems no trick at all for you to make people use more gas and like it.

Anyhow I want to congratulate you on the increase your business must show for the past year and for the aggressive way you have gone after this increase.

May 1936 be still better!

Cordially,
Ford G. Owens,
Publisher the Times"

As indicated by the above expressions of satisfaction, which are representative of the general sentiment now existing, our public relations have shown a marked improvement in a year's time. Without this improved feeling, we never could have developed the following business since we came into the situation a year ago:

Annual revenue added at a cost of 78c per dollar..$5,000.00
Gas sales increased 11% over previous year.
Automatic water heaters sold..140
Gas ranges sold 125
Reconnected ranges 124
Dead services revived 120

In order to determine our most rapid load-building market, we made a complete survey of the town early in the year. We found the field for automatic water heating practically untouched; only 50 gas automatic heaters and 13 electric heaters were in use. We considered ourselves fortunate in having a potential market as open to us as to competitive fuels. Here was a very good opportunity to put gas into homes where a heavy investment in competitive cooking and refrigeration equipment practically closed the door to other chances of getting those customers back.

Of the 464 customers who had left us, 225 had gone to electric cooking and 239 had gone to kerosine, gasoline and coal. We realized that a substantial invasion into the lost cooking business would come slowly for two reasons:

(1) Investment in present cooking equipment, and
(2) Very competitive fuel prices.

Therefore, we set out to get the water heating load, for our problem was one of immediate development. Of course, we are not overlooking the removal of electric and oil stoves and at present are concentrating our efforts to get this back with measurable success.

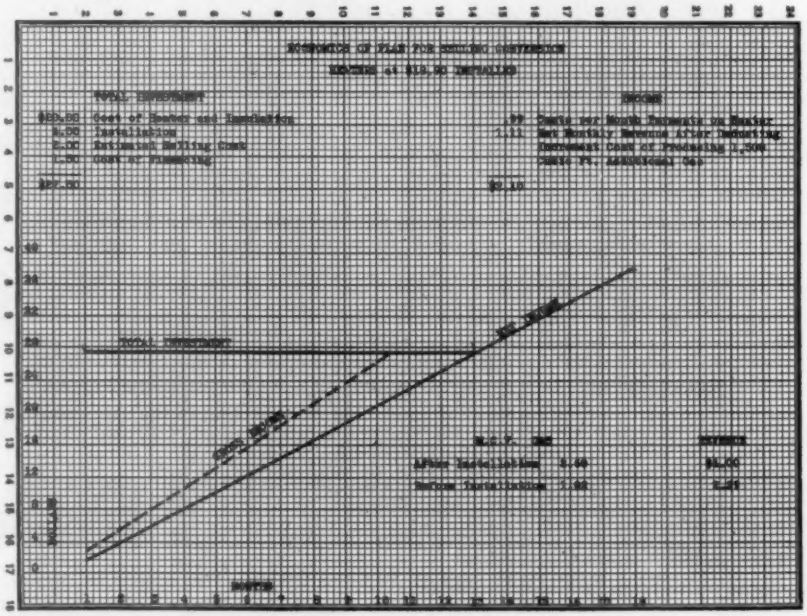
Our survey revealed 859 homes using a gas heater, 137 of which were in homes using electric ranges. To stem the tide of electric usage, we made an arrangement with a manufacturer to convert tank heaters into automatic water heaters.

As a result of this activity, we have sold 140 of these heaters since the inception of the plan, March 1, 1935. This gives us a 22% saturation on homes surveyed. As previously stated, like Grape Nuts, "there is always a reason" for unusual results, and this is ours. We installed the heater for $18.90, with a payment plan of 99c down and 99c per month on the balance.

After we analyzed our potential water heating market, we saw two very important factors which, in our opinion, necessitated a plan to sell heaters at this price.

1. The average yearly gas consumed in a home having gas cooking and tank heating equipment was only 9 M cubic feet, for which the customer paid $17.90. In the case of a customer using gas only for a tank heater, the annual consumption averaged 2.8 M cubic feet, for which the customer paid $5.90 per year. Obviously, an automatic conversion in either case meant to the customer a greatly increased monthly gas bill. Bearing in mind that we were concerned in building revenues and not merchandising profit, we could scarcely expect to get much of a saturation in automatic water heating by adding a mark-up on the heater to the customer's increased gas bill.
2. Electric competition was the other important factor which required a low-priced heater. The electric rates in this territory are:
   6.4c per KWH for the first 30
   4 per KWH for the next 40
   3 per KWH for the next 230
   2 per KWH for all over 300

(Continued on page 64)



"Breakfast in 6 Minutes"

A Unique Contest Proves Speed of Gas Cooking

By Wm. E. Leverette

Commercial Manager
Nashville Gas & Heating Co.
Nashville, Tenn.

THE idea and theme "Breakfast in 6 Minutes," happened to occur in the home of one of the originators of this plan. He came down to breakfast rather late one morning and asked the colored cook how long it would take to fix breakfast, and that he was in a hurry. The colored cook immediately answered, "'Bout six minutes." He promised her a present if the breakfast was complete in ten minutes, and just for fun timed her. Exactly six minutes, thirty-five seconds expired when the breakfast was ready to serve. The thought, "Breakfast in 6 Minutes," kept turning over and it was finally decided "why not use this as a slogan?"

First, because to use five minutes has that psychological sequence of being indefinite, six minutes not being a fixed figure.

Second, we are actually talking speed, but have not applied it to a particular function.

Third, breakfast is a meal that in most homes is a very hurried one, and the housewife's memory is utilized for actual comparison with a domestic daily performance.

Fourth, without any question, gas is the one fuel that from a perfect cold start, can cook this meal in the allotted six minutes.

Preliminary Tests and Results

We then began making certain tests using the following equipments: 1. Several different modern gas ranges. Their time did not materially vary. 2. Electric ranges of the very latest type with the so-called high speed units, and other newer equipment. 3. Kerosene stoves of better manufacture. 4. Coal and wood stoves.

We selected for this breakfast the accepted American morning meal consisting of bacon, eggs, toast, and coffee, which positively is not a trick meal that is seldom used. We selected six eggs, six pieces of toast, six pieces of bacon, and four cups of coffee because the average American family is approximately 4.3 people, and this quantity of food would probably be used when it is taken into consideration, all classes of people, including manual laborers, skilled laborers, professional men, and others.

The bacon had to be crisp, the eggs done, the coffee properly brewed in a glass coffee maker, and the toast to a definite pre-determined brownness. The water was taken at about average room temperature in this climate, which would be conservatively 75 degrees because we have so much hot weather. We did not give ourselves credit for a large percentage of homes, having some form of hot water.

In the first tests on gas ranges, our time ranged from 5 minutes, 35 seconds, to 6 minutes, 40 seconds; this, of course, with an experienced economist. It took approximately twice as long for the bacon, eggs, and toast on the electric range as it did on the gas, and the coffee very much longer where the glass coffee maker was used. The coffee time for the electric can be speeded up with an electric percolator. However, it is known that 10 minutes is about the fastest time for properly percolating coffee. The coffee brewer with an electric unit required 12 minutes, 40 seconds.

Photograph taken during finals of Tri-Cities Contest. Time keepers on stairway. Center Contestant Mrs. W. B. Martin of Chattanooga, winner. Notice Mrs. Martin looking in oven at toast and turning bacon at same time.

REGISTRATION

Tri-Cities $500.00 Breakfast in Six Minutes Contest

★ ★ ★

The Nashville Gas & Heating Company, in cooperation with the Knoxville Gas Company, Knoxville, Tennessee, and the Chattanooga Gas Company, Chattanooga, Tennessee, will conduct, beginning at 9:00 A.M. January 16, 1936, a Breakfast Cooking Contest to find the fastest cook in the tri-cities. Rules and regulations are as follows:

1. One woman sixteen years of age or older, from each household in the districts served by the above-named companies, will be eligible to enter (white only).
2. The entrant must register with the detachable blank on the bottom of this page and turn in to the Gas Company offices at once.
3. Starting times will be as follows: Mornings, 9:00, 9:30, 10:00, 10:30, 11:00, and 11:30; Afternoons, 2:00, 2:30, 3:00, 3:30, 4:00 and 4:30. Five or more entrants will be selected for each starting time. The first person completing the breakfast will be timed and placed in the finals to compete for stated prizes.
4. Entrants will be required to scramble six eggs, fry six slices of bacon, toast six slices of bread, and make four cups of coffee in the modern coffee maker. All necessary foods and equipment will be furnished by your Gas Company. Foods will be distributed to local charities.
5. So that all entrants may have a fair chance, the same range and cooking utensils, work tables, etc., will be furnished by your Gas Company.
6. The total prizes amount to over $500.00, and include a $125.00 gas range, to be given by each listed company to the one who finishes first in the finals in each town. The three winners in Nashville, Chattanooga, and Knoxville will be given a free trip to Nashville to compete for a further prize of $100.00 for the fastest cook in the tri-cities. The Nashville woman, whose cooking time on any breakfast is lowest, provided she is not a grand prize winner, will receive FREE, a $50.00 gas range, or an equivalent credit on any range she may choose. In addition, three other fine merchandise prizes will be given during the contest.
7. We reserve the right to publish the list of entrants and the time required in cooking their breakfast.
8. After registering, the entrant will be given a starting time at one of the stipulated half-hour intervals. Because of the possible large number of entrants, it may be that we will have to limit the number of entrants from each of our eight geographical districts of the city.
9. An entrant is automatically disqualified for breaking a dish or coffee maker.
10. The management of the above companies will attempt to appoint proper judges, and their decision must be considered as final.
11. Sample foods will be prepared and each participant's finished product must be equally as done as the sample.
12. Entries signing agree that they are entering on their own and total responsibility.

Registration Blank

Name.....

Address..... *Telephone*.....

Type Fuel now using—Gas..... *Coal*..... *Oil*..... *Electricity*.....

Would you like to bid on one of the $125.00 demonstration ranges?.....

How Much?..... *(Note: Minimum bids to be accepted will be $75.00.)*

Other interesting facts developed through these tests. One, was that when a new cooking vessel was removed from the top of the electric range, it was definitely dirty from sticky substances or grease effects that had stuck to the electric unit. Cleanliness is one of the major talking points of the electric range industry. With the expensive type electric elements, the amount of cooking filth was not nearly so noticeable. These units run the cost of the ranges up materially.

Cleanliness of Gas Demonstrated

There was no grease, sticky substances, or anything else on the bottom of the vessels that were used on top of the gas range with the modern type burner. This included similar units to Magic Chef, Roper, the Harper, and others. It is also interesting that we did not clean the gas top burners used during the demonstration as we wanted these for demonstration of positive cleanliness.

Another interesting factor is that the actual BTUs consumed for these operations on gas and electric did not vary in proportion to the percentage as is shown on various laboratory tests.

An example of this is the 2,000 watt electric unit valued at 6,600 BTUs used for bacon required 1.70 times as long as the gas with a maximum of 10,000 BTUs. The other operations were relative. The toast from the gas ovens was noticeable for its superior quality.

The time from the coal and kerosene ranges was even slower than the electric, and it was not possible to properly toast bread in the last appliances.

Everyone of the above tests were made in local homes and under actual home conditions with no "trick shots."

Breakfast Cooking Contest

We started working on the plans for the Tri-Cities Breakfast Cooking Contest about the first of December. Completed arrangements and details were worked out by members of the Knoxville, Chattanooga, and Nashville gas companies. It was decided that each property would give a $125.00 range to the winner in their respective cities, and a $100.00 cash prize to the winner in the State championship of the three from each district. The details were virtually the same in all towns with slight variations to meet what was believed best by the local operating executives. This included selecting whatever range to be featured in each town.

Advertising and Publicity

All ranges were set at a definite BTU value with necessary governors and other such equipment. We started advertising with teaser ads. We followed this with the announce-

This Morning's Record Time in the Gas Companies'

$500 CONTEST

To Find the

TRI-CITIES' FASTEST COOK

Was Set by

MRS. FRED GRAY

1117 Shelton

Who completed her test breakfast in

5 MINUTES 50 SECONDS

Including necessary preliminaries, elimination of trash and other required details

NASHVILLE Gas AND HEATING COMPANY ON SIXTH AVENUE

ment ad, rules of the contest, etc., and ran daily ads showing the entrants and time required. The newspapers ran photographs and news stories in addition to the advertising.

The contest itself was conducted as follows: The women qualified in groups of five or more, and the one finishing first was declared the qualifying entrant from those entries. There were 16 to qualify and these were then placed into regular matches, one against one, and the winner from each going to the next bracket. In this way it was handled like any other competitive sport. First there were sixteen, then eight, then four, then two at the finals, the winner receiving a $125.00 stove plus an entry place for the state finals. The qualifying time ranged from four minutes, forty-one seconds, to one group which was 9 minutes, 12 seconds. After the regular matches started, and the women were more accustomed to the range, the time never exceeded six minutes.

Finals Broadcast

The finals of our contest, and the State finals, were broadcast over one of the local radio stations, and it has been found that we had a very appreciative and interested audience.

The contest definitely proved speed, and we know has created more talk than any cooking school or other such function that we have had of the same nature.

We secured the services of the Parent Teacher's Association as judges and as a result practically no bad effects were experienced. Stop watches were used for timing.

It was most interesting to watch the qualifying groups as well as the matches, and the radio story as explained by the announcer may have sounded humorous. The details were first announced, and then the word given to GO. After that the listeners may have heard somewhat as follows: "They're off. . . . They're placing the pans in their proper places. . . . Mrs. Jones is filling her coffee maker with water. . . . Mrs. Smith is closely following her . . . they're neck and neck . . . both are unwrapping their bacon . . . listen to the speed of those eggs being cracked and placed in the skillet. . . . Mrs. Smith is doing everything at once, mixing eggs with her left hand, turning the bacon with her right, closing the oven with her knee, and watching the coffee with her eyes, and generally speaking—doing everything except sweeping the floor," and so on until the first to finish had looked at the time keeper and said "Finished!"

In our opinion the value of this contest to a company under our competitive conditions is unquestionable. As to its value where things are running a little smoother, we do not know.

We feel that we have attained exactly what we went out to do, and that was: Fully prove, we save mankind's most desired element, "TIME."

Here Are the Leaders
IN THE GAS COMPANY'S
$500 PRIZE CONTEST
To Find the Tri-Cities' Fastest Cook
★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★
The first three qualifying days of the contest have passed and remarkable records have been made by the contestants. Proof has been added to proof that GAS is the fastest of all cooking fuels. These women, most of whom were unacquainted with the range and utensils used, have completed their contest breakfasts in amazingly short time.
★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★
These Women Qualified Friday—
Mrs. R. W. Simmons, 830 Porter Road
6 Minutes, 47 Seconds
Mrs. J. H. Murray, 1509 Ferguson
7 Minutes, 20 Seconds
Mrs. O. C. Plaxico, Gale Lane
7 Minutes, 15 Seconds
Mrs. W. B. Cowan, 907 Halcyon
6 Minutes, 17½ Seconds
Mrs. George McCormack
6 Minutes, 12¼ Seconds
Here Are Saturday's Leaders—
Mrs. H. E. Tankaley, 3819 Baxter Ave.
6 Minutes, 39¾ Seconds
Mrs. Roy McCrory, 1107 Seymour Ave.
6 Minutes, 17 Seconds
As Previously Mentioned—
The leaders in Thursday's qualifying contests were: Mrs. H. T. Kesterson, 2221 Tenth Ave., S.; Mrs. C. A. Wilson, 1104 Chesterfield Ave.; Mrs. W. L. Corder, 1404 E. Douglas Ave.; Isabel Cline, 1019 Virginia Ave.; Mrs. W. T. McDonald, 1008 Chicamauga; Mrs. Ethel M. Thornton, 920 20th Ave., S.
Last Qualifying Rounds Monday
Monday is the last day for qualification with the run-offs between the leaders beginning Tuesday. Thursday the final contest will be held to compete for the first prize of a $125 Modern Gas Range and the oppertunity to meet the winners in similar contests held in Chattanooga or Knoxville to compete for a cash prize of $100.00 and the title, "The Tri-Cities' Fastest Cook."
BEST TIME
6 Minutes: 12¼ Seconds
Was Set By
Mrs. George McCormack
In the preparation of test breakfasts the contestants are required to perform several operations in addition to actual cooking. Here are the actual times required for each operation, set by one of the leading contestants:
Time for opening range, unwrapping bacon, breaking and beating eggs, measuring coffee, water, etc.: 1 minute, 40 seconds.
Best time for scrambling 6 eggs: 3 minutes, 1 second.
Best time for frying 6 slices of bacon: 4 minutes, 5 seconds.
Best time for toasting 6 slices of bread: 3 minutes, 53 seconds.
Best time for making 4 cups of coffee: 4 minutes, 21 seconds.
Time for cleaning range and disposing of used vessels: 11 seconds.
The above times are clocked as nearly as possible. Competitive time, 6 minutes, 12 seconds checked by stop watch.
SALE
of
Contest Ranges
At the close of the contest the 5 new Roper Gas Ranges will be offered for sale at Greatly Reduced Prices. These ranges look, operate and ARE as good as new. They carry the same guarantee as new ranges. We invite your inspection.
NASHVILLE GAS & HEATING CO.
FINAL CONTEST 3 P. M. THURSDAY
TRI-CITIES' FINAL 3 P. M. FRIDAY TO BE BROADCAST OVER WLAC

Newspaper Advertising Used During Contest.

Domestic Gas Utilization

Range Division — Part I

What the Market Offers

By

Charles W. Merriam, Jr.

Div. Commercial Manager,
Roanoke Gas Light Co.
Roanoke, Va.

A LIVELY argument has been in progress for years within the gas fraternity as to which of two general types of retail salesmen secure gas range sales in the greater volume: 1—those whose chief persuasiveness is born primarily of an engaging personality, a pleasing persistence and a self-starting tongue that is glib with glittering generalities or, 2—those whose main appeal to the customer arises from a demonstration built upon an intimate knowledge of the fundamental construction and adaptability of the equipment to the technique of domestic cooking. Some executives hold that for retail salesmen to acquire a rudimentary knowledge of dietetics (at least to the extent of ordinary meal preparation) is highly desirable whereas to be familiar with the heat utilization principles of gas and its competitive fuels, is indispensable. This conception embodies, to a degree, the idea of a trained specialist or a home economist. Others believe that domestic range sales volume is dependent almost solely on how many people are subjected to a "canned" sales talk (i.e., recitation of a memorized presentation *a la* phonograph record style). The battle royal therefore is between the lung and leg power of mechanicalized selling on the one hand *versus* the individualized selling demonstration growing out of a penetrating understanding of the specific customer need and its proper solution. The debate is between the selling effectiveness of memory as compared with that of thinking. The two opposite view points, of course, represent the extremes with perhaps some compromise between the two representing the best combination. The general consensus of opinion within the industry of today is that conscientiously employed, natural selling ability is enhanced and made more productive when the retail salesman is well-drilled and steeped in a thorough understanding of the range itself, its specifications, operations, and of the entire field of its use. In the belief that retail salesmen and the companies' "heavy thinkers" are interested, in so far as sales departments are concerned, primarily in the greatest possible number of unit sales at the highest possible average unit price, this series of articles[1] is dedicated, therefore, to the purpose of presenting such background theory as seems to be applicable to retail range selling and further to the discussion of certain "pavement-tried," "kitchen-accepted" selling ideas.

Long whiskered academicians are much in evidence who are seemingly obsessed with the conviction that public buying choices are molded exclusively by the cold facts of pure logic. Would that such were true!—the gas business would have an "easier row to hoe." Nevertheless, established, demonstrable facts properly presented and *sold* to enough prospects will nail down the lion's share of the range business. In conjecturing on how best to grapple with what makes people accept or reject proposals for the purchase of modern gas ranges (or worst of all to gaze with utter indifference on salesmen's advances) the gas industry is prone to regard only the lately arisen threat of electric competition. Still people go on merrily buying new coal and oil cooking equipment and the words "buying-coal-and-oil——" are here used advisedly because people are seldom *sold* such equipment by the vendor—they merely buy it. An attempt might be made to outline the prime consideration of logic that should condition the buying judgments of the masses respecting the choice of home cooking apparatus. But to be of value such an outline treatment must possess rugged honesty even though for the gas industry this might involve some distressing and perhaps damaging admissions in certain respects. And further, the entering into of such a cold reasoning process must not obscure the necessity for "selling strengths," not by defending weakness, but by emphasizing merits—in short, salesmanship.

[1] *Familiarity with the initial article of this series, "Engineering ABC's" in the May, 1935, issue will be of help in penetrating the following discussion of gas ranges and other cooking equipment.*

Comparative Merits

The following tabulation lists the principal items that ought properly to be weighed in the balance by the customer when formulating judgment as to the most advantageous equipment and fuel selection and further endeavors to indicate for each item considered the relative rank of the average, currently marketed, standard equipment utilizing respectively the four common fuels, coal, oil, electricity and gas:

(For tabulation see page 18)

Study the forementioned tabulation—this is the meat of the situation. This tabulation does not attempt to appraise the relative value of the consequences of the several items listed. For instance, no fool would attach as much importance to "Resale market" as to "Original cost." Nor is the ranking of the fuels, i.e., A, B, C, and D, in any particular item an indication of anything other than of rank or position. These rankings might have been resolved into percentage ratings or standings. For instance, under "Ease of ignition-top burners," gas instead of being ranked as "A" would have been rated 100% and coal instead of "C" might have been fairly rated 20% and oil at 80%, etc.—the complications of such a method would be endless, and subject to unrelenting controversies. However, sticking to

COMPARISON OF THE ESSENTIAL CONSIDERATIONS RESPECTING CHOICE OF DOMESTIC COOKING EQUIPMENT USING DIFFERENT FUELS

	Coal	Oil	Electric	Gas
Original cost	C	A	D	B
Original installation cost	C	A	D	B
*Fuel cost	A	B	D	C
Rate of depreciation	A	D	C	B
Maintenance and service cost	A	B	C	A
Reinstallation and moving cost	C	A	D	B
*Resale market	C	B	D	A
*Total "out-of-pocket" yearly direct cost of entire cooking service	A	B	C	B
*Widest acceptance	B	C	D	A
Dependability of fuel availability	A	A	B	A
Trouble in securing fuel	B	B	A	A
Continuity of market price of fuel	B	B	A	A
*Availability of appliance service	B	B	A	A
Style leader	C	D	B	A
Extent of selection in standard retail models				
Sizes	B	D	C	A
Arrangement	B	C	B	A
Color combinations	B	B	B	A
Storage space	B	D	C	A
No need of specially designed cooking utensils	A	A	B	A
No need for training operators	A	A	B	A
Possible retention of food values				
Top heaters	B	A	B	A
Oven	B	B	A	A
Palatability	B	B	B	A
Ease of cleaning				
Top heaters	B	C	D	A
Oven interior	C	C	B	A
General exterior	B	C	A	A
Fuel cleanliness				
Top heaters	B	B	A	A
Oven	B	B	A	B
In kitchen	C	B	A	A
Ease of ignition				
Top heaters	C	B	A	A
Oven	D	C	A	B
Speed				
Top heaters	B	C	D	A
Oven	C	B	B	A
Broiler	..	..	B	A
Cooking time and supervision required				
Top heaters	D	B	C	A
Oven	B	B	A	A
Accuracy in control of oven	B	C	B	A
Baking quality	B	B	B	A
Flexibility				
Top heats	D	B	C	A
Oven heats	C	B	A	A
Broiling heats	..	..	B	A
Safety	B	C	A	A
Effect on kitchen atmosphere				
Odor	B	C	A	A
Temperature	C	B	A	A

*Subject to local conditions.

the ranking method, a totaling of this tabulation as follows might shed some light:

Fuel Classification	*A*	*B*	*C*	*D*
Coal	7	21	11	3
Oil	7	21	10	4
Electric	15	14	7	8
Gas	36	7	1	0

Numerically, at least, that is a rather formidable array of strength in the camps of the gas industry. This preliminary survey of the domestic cooking field is admittedly open to many objections and dissenting opinions. In fact, basic changes are in progress every day, with time, might alter these circumstances. Partisan parties inevitably will take exception to some of these rankings under the respective fuels, but this and following articles in the "Range Division" will endeavor to give conclusive evidence on each and every evaluation. To most people conversant with the daily sales problems of the field it is generally deemed to be obvious that a salesman having familiarity with each item of the above tabulation and equipped with data to prove his assertions, possesses a genuine advantage. Canned sales talks *a la pianola* manifestly cannot cover all of these items fully. However, a salesman armed with a complete knowledge of each of these items could "waylay" any competitive chatter and adequately answer any reasonable customer questionings—in short, specialty selling, particularly in the home, is the art of employing appropriate knowledge persuasively.

Range Types

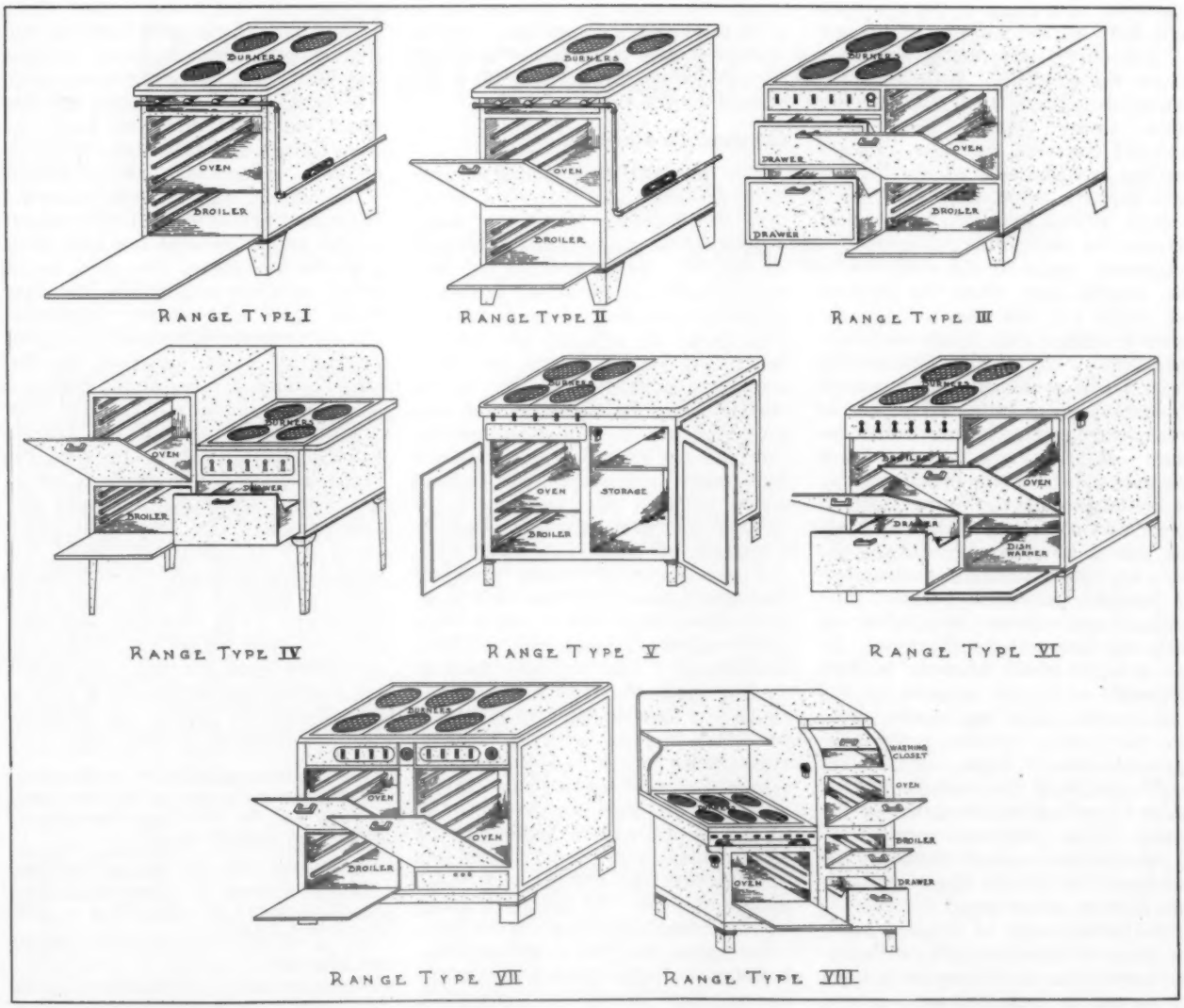
There being in this country some 15,000,000 domestic gas users [2] purchasing approximately 1,000,000 gas ranges each year, the demand is inevitably such that domestic cooking equipment is available in almost every conceivable size and arrangement throughout a wide scale of prices. A retail salesman's first normal duty is to know what the market has to offer to which end eight illustrative drawings are included to show the essential features of the most generally accepted trade classifications of gas range types in common use and currently being sold. In these drawings the distinguishing characteristics of any manufacturer have been avoided, the chief purpose here being to depict the arrangement of the main sections or parts, i.e., top section, oven, broiler, and in most instances storage space, devoted to the four main functions of the gas range. Inspection of these eight types will indicate models being offered to fit every reasonable

[2] *Government statistics and competent authorities estimate occupied American homes to have had active in use, during* 1935, *self-contained cooking equipment roughly in accordance with the following tabulation:*

Gas	12,500,000
Electric	1,300,000
Coal	9,500,000
Oil	3,000,000

Numerous factors have affected this nation-wide classification, among which are people in public institutions, government agencies, non-housekeeping and light housekeeping apartments, rooms, hotels, and others where meals are not prepared by separate families at the place of residence. This accounts for the fact that the above totals only 26,300,000 *or somewhat less than all the nation's occupied places of dwelling. However, there are numerous homes in which two fuels are employed in such combinations as coal with gas, and coal with electricity, particularly the latter, making thereby for some duplication. It is noteworthy to observe that in* 1935 *there were approximately as many gas ranges sold in that single year as there were electric ranges connected and in service all over the country after some* 25 *years of promotional effort.*

One fact should not be lost sight of, namely, that the majority of electric ranges are installed outside the service areas of gas companies, notably in scattered suburban homes, summer resorts, and farmhouses. The same can be said to a perhaps lesser proportionate extent of coal and oil stoves among which users the foreign and Negro class figures prominently. Suffice to say that among "garden variety" white Americans in communities of 4,000 *and up, the gas range rules supreme. Does not this answer the question of widest general acceptance?*



Type 1. 4-Burner Cooker with single drop door and open manifold.

Type 2. 4-Burner Cooker with 2 drop doors.

Type 3. "Standard" Table-top with separate oven and broiler doors, 2 storage drawers and concealed manifold.

Type 4. Left-oven Console with single storage drawer.

Type 5. Swing-door Table-top with single door for separated oven-broiler compartment.

Type 6. Elevated-broiler Table-top with single storage drawer and dish warmer.

Type 7. Double Oven—6 burner Table-top with broiler under "pastry" oven.

Type 8. Six-burner Cabinet with one small and one large oven, with warming closet, broiler, storage drawer, high back splasher and shelf.

domestic need as to space, arrangement, cooking capacity and purse. The statement that the prospective purchaser has a greater selection in gas ranges as compared with the choice in cooking equipment using any of the other three fuels is so generally recognized as to be scarcely debatable.

Console Versus Table Top

Examination of these illustrative drawings reveals that ranges are divided into two main divisions; to wit, first, the "table tops" (sometimes called "flat tops," drawings Nos. 1, 2, 3, 5, 6, and 7) in which the principal cooking operations, boiling and frying, are performed at a level above the oven and broiler, second, the "console" range in which the bottom of the oven is elevated up to a level almost equal with the top burner section and the broiler up to a point just underneath the oven. The table top styles currently dominate the market rather completely.[3] Arguments wax long and heated concerning the relative merits of the console and table top. A brief analysis establishes that the console provides a more convenient location for both oven and broiler thereby avoiding stooping, this advantage being gained at a sacrifice of the convenient working space opposite the top burners as afforded by the table

[3] *As between the table tops and consoles a significant style evolution has been witnessed in the last decade because at the beginning of the century practically all gas stoves were of the single door and double door cooker type. Strenuous efforts were made by the then "new dealers" to "bring the oven up in the world" —not so rough on the ladies stockings at the knees when crouching down, not to mention starched, puff-sleeved shirt waists, pompadoured coiffures, laced corsets, and other affectations of the "Gay Nineties," putting thereby a premium on handiness and high visability around the "cook stove"—and other arguments of like nature. The manufacturers' harangues being not without merit, the cabinet range crept into the market shortly before the War, whereas in the '20's the cabinets and consoles were by far the dominant note. By '28 the table top type again made a reappearance on the scene and by '34 was pretty well "hogging" the show. Thus, one complete cycle has been witnessed—that is, up to the moment because there are indications now of a reversal in the trend.*

top type. If a range is not equipped with both an oven heat regulator and a "pull out" broiler, most observers favor the console. In most incidents the standard table top includes more storage space, being constructed closer to the floor. People making frequent use of the broiler, grill suppers, toast, open-face sandwiches, broiled fish, etc., have a preference for the console. The point is frequently made to the disfavor of the console that when the burners are all in use, the row next to the oven is difficult to reach and further, that with the constant use of these burners the enamel panel on the oven wall is subjected to severe treatment, a circumstance in some cases obtaining with the back splasher panel. Undoubtedly in day to day cooking on top burners, which incidently comprises fully 75% of the use of the average range, the table top offers the distinct advantage of handier and safer access. The working space above the oven of the table top is a noteworthy asset. In the modern trend toward "built-in kitchens" with their expanse of flat surfaces the table top seems to fit into the general scheme a bit more harmoniously. Some housewives point out that the console allows easier cleaning underneath on the floor. Final judgment appears to be one for the personal choice of the purchaser since both types have certain definite advantages.[4]

The cabinet style of range is much the same as the console except that in the former the oven bottom is on a horizontal line with the top burners. Designers of acute architectural sensibilities hold that the cabinet is a bit ungainly in appearance, except in a six burner stove, hence as a type the cabinet was relegated to the background in the middle 20's.

Construction Materials

The question of the mode of construction and the materials going into the building of a gas range should not be passed over lightly although the mere mention of this rather touchy phase of the subject is certain to provoke vehement protest. The choice as to materials lies between cast iron and steel, the latter coming into vogue generally, in the middle 20's. In the true cast iron range the front and door frames, the legs, the top piece on table tops and some other members are cast in sand molds whereas the panelling is of sheet iron. Steel stoves are made in a variety of ways depending upon the manufacturer. Some assemble the basic frame structure with angle iron (structural steel) welded together on which frame the panelling is secured. The analogy is frequently made that the steel stove is similar in basic method to the modern office building with its skeleton steel frame work of I-beams on which the outer masonry or curtain walls are resting. Other manufacturers by the use of ingenious die work, stamp out pieces in such a fashion that the bottom and sometimes sides serve the double purposes of frame and panelling.

In some quarters cast iron construction is highly prized. Although the patterns themselves employed in producing castings from the foundry molds are considerably less expensive than the press dies from which steel range parts are stamped, the manufacture of the cast iron range is the more costly. The extra elements of manufacturing cost in the cast iron range have to do with the hand work incident in foundry and machine shop practice, to the grinding of door frames to attain proper fit and to inherent enamelling difficulties. Due to the obstacles both in producing very thin castings and to the comparative lack of strength and ductility of cast iron, this type of construction results in a much heavier finished range, which in turn generally involves higher freight costs to the point of use. Despite this the cast iron range has many advantages not the least of which is the impression conveyed to the customer of a lot of substance—a real hunk of *terra firma*—even shutting the doors lends a suggestion of solidarity. Properly cast and fitted doors will remain tight indefinitely without adjustment but such cast door frames must have good material and workmanship because once warped the door is ready for the scrap heap. The claim is not unfounded that because cast iron does not bend the oven linings and side walls stay put, all in all a sort of Cadillac flavor.

The steel range of today's market is playing first fiddle. Improvement in die technique and machine shop practice has placed the steel range in the production-assembly line class with low unit costs attainable through volume alone. The original setting up costs, however, in the larger plants are enormous before a single stove is ready to ride but once organized and rolling, the craters have a sizeable job. The steel gas range like any other similar class of goods thus assembled demands precision work. The dies from which parts are stamped are costly but must be virtually perfect in order to have a finished article with close tolerances. The strength and pliability of steel permit the production of stoves that are light in weight yet durable and satisfactory over a long period of years.[5] Steel being

(Continued on page 66)

[4] *Other minor pro's and con's are advanced among which is that the console cuts off natural and sometimes artificial light. Offsetting this the console advocates assert that with the table top the products of combustion are either thrown forward in the operator's face if the vent goes through the back rail, or dirties up the wall if discharged at any point to the rear of the back rail. Rabid partisans declaim that the console conveys the idea of a disjointed hump with its dislocated oven thrusting upward in marked contrast to the smooth symmetry of the table top. Lack of storage space in the console can, in some stoves, be overcome by a cabinet base (two drawer section replacing high legs) although this practice has virtually gone out of fashion. The disadvantage of the low broiler on the table top can be overcome by elevating the same up to replace the drawer immediately under the top burner cocks but this introduces the added expense of another burner, more insulation, another flue, refined construction above the broiler burner and new provisions for a burner chamber under the oven. This latter elevated broiler, table top is doubtless the most versatile and is the most generally acceptable to the majority of forward looking purchasers with the necessary means.*

[5] *A searching analysis of the properties of cast iron and steel is a life time study in itself but the following characteristics will shed a glimmer of light:*

	Cast iron (better grade)	*Steel (C.-0.08-0.15)*
Specific gravity	7.207	7.833
Endurance limit, lb. per sq. in.	11,000	26,000
Modulus of Elasticity	16,000	30,000
Expansion per °F. change	0.000,006,2	0.000,006,5

The above indicates steel to be approximately 9% heavier than cast iron, to have greater resistance to repeated shock and also more elasticity. It is likewise of interest to note that cast iron has a greater resistance to bending, a quality but which would adversely effect the enameling process. The brittleness of cast iron requires a reasonable thickness to resist the force of sudden shocks.

In reality the steel sheets are purchased in two varieties for stove manufacturing. The steel shown above of very low carbon content (sold under such trade names as Armco) is referred to as an enamel sheet. These are quite costly but essential for good enamel. Hot rolled annealed stock of a higher carbon content which is less costly is wholly satisfactory for interior sheeting parts where finished enamel surfaces are not necessary.

Much of the early discredit brought upon the steel range arose from what is known as the "bench job" in which in many instances the sheeting parts were bent instead of being pressed from dies, a practice which resulted in warpage and cracking of enamel. In small, ill-equipped shops this practice is still in vogue. It is safe to say that not until the late '20's was the art of making steel stoves sufficiently advanced to permit of a product competitive in quality with the cast iron range.

Regulator Structures

PART IV

Manhole Frames and Covers

By

ERICK LARSON

Standard Dimensions

The American Standards Association has prepared tentative standards pertaining to all phases of manhole frame and cover construction and design. Many of the illustrations used in this article duplicate or are similar to these tentative standards. The American Standards Association specifications for frame and covers will meet practically all requirements of safety, ease of use and minimum of replacement, and if universally adopted will result in economy. Standardization will result in the carrying of considerably less stock than under present conditions; and this stock will cost less due to the economies in foundry practice resulting from large quantities of but few styles and sizes.

The Tentative standards recommend the use of flat rather than cambered covers to provide smoother riding for traffic. Both circular and radial ribbing of the covers is advocated to give increased strength and to relieve cooling strains during the manufacturing process. The center space is recommended for company designation, as lettering or symbols at any other part of the cover increases the cost.

For cast unmachined covers it is recommended that the depression of the cover beneath the top of the frame be no more than 3/16" at any single point and no more than 1/16" average over a total of one-fourth of the circumference.

The circular manhole cover has been more generally adopted than the square type. A decided advantage of a round cover is that the cover may be placed in the frame at any point without fear of its dropping through into the pit below. This safety feature alone warrants the adoption of round frames. A round cover is not only insurance against injury to persons in a pit but also against damage to mains, regulators or other equipment.

The standard sizes for round manhole frames recommended in the tentative standards of the American Standards Association are 22", 24", 27", 30", 33",36", and 42" diameter. The sizes between 22" and 30" are the most common.

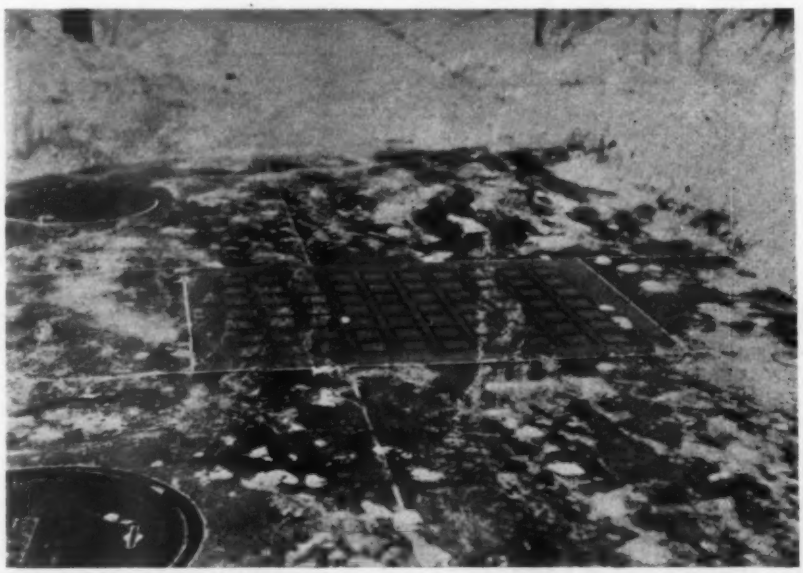
In selecting the height of the manhole frame an important consideration was the average depth of concrete road surfaces. A 7" height of frame was selected to agree with the average paving design. On the flared types of frames a 10" height was selected, it being necessary to obtain the flare on the braces between the wall and the base.

To meet a need for a frame low in height where special conditions exist a height of 5⅝" minimum has been adopted. The 5⅝", 7" and 10" heights will meet practically all conditions; but where an inner seal is used it has been found advisable to increase the height of frames to 11" in order to avoid damage to the locking screw of the inner cover or seal by the top cover when the latter is being removed. When seals are used the additional height also allows space for the formation of ice where it will least interfere with removal of the cover and where the ice itself may be easily removed.

The ordinary wall thickness used is ⅝" except in the light weight frames where the walls are ½" thick. When ribs are omitted a ¾" wall thickness is recommended.

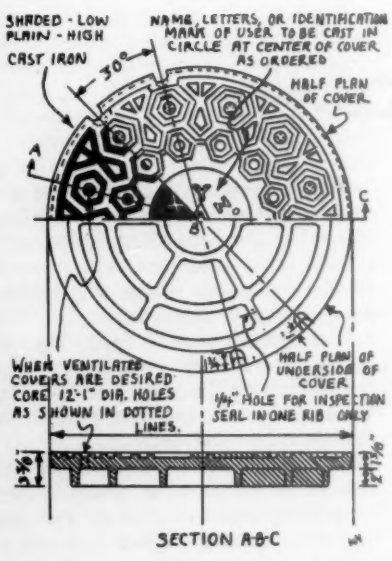
The manhole frame outside wall should be as free as possible from projecting lips to facilitate the placing of concrete. When lips are required to hold covers in place they should be placed inside the frame if possible.

The ordinary width of flange recommended is 4", although 5" and 6" widths are included in the standard dimensions, but are termed optional rather than recommended. On shallow small frames 6" flanges are sometimes used to secure the same bearing area as on the full height frames. While their use should be restricted, shallow frames are nevertheless essential stock items, as they are often required to replace original full height frames when roadways are regraded.

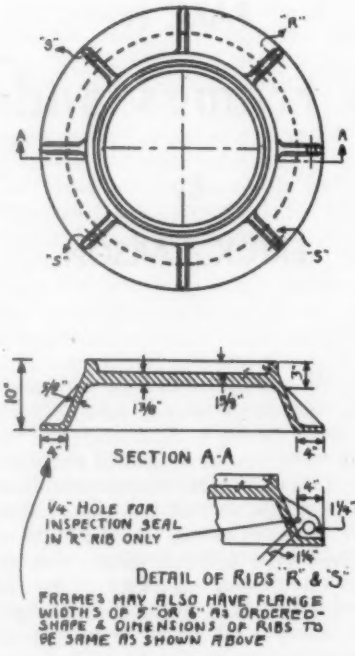


Subway Grating in Sealing of Regulator Pit.

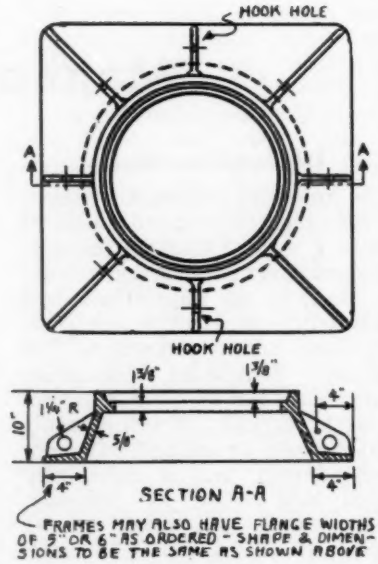
Types of Manhole Frames and Covers


SHADED - LOW
PLAIN - HIGH
CAST IRON
NAME, LETTERS, OR IDENTIFICATION MARK OF USER TO BE CAST IN CIRCLE AT CENTER OF COVER AS ORDERED
30°
HALF PLAN OF COVER
WHEN VENTILATED COVERS ARE DESIRED CORE 12-1" DIA. HOLES AS SHOWN IN DOTTED LINES.
HALF PLAN OF UNDERSIDE OF COVER
1/4" HOLE FOR INSPECTION SEAL IN ONE RIB ONLY
SECTION A-B-C

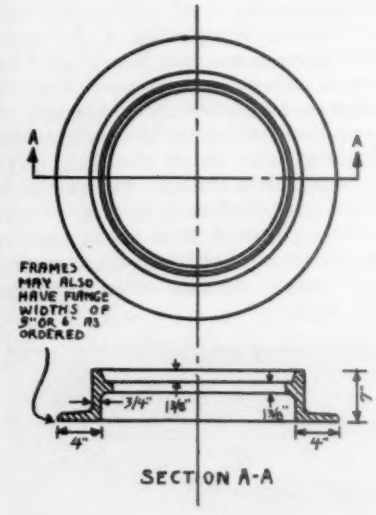
Manhole Cover


"R"
"S"
SECTION A-A
1/4" HOLE FOR INSPECTION SEAL IN "R" RIB ONLY
DETAIL OF RIBS "R" & "S"
FRAMES MAY ALSO HAVE FLANGE WIDTHS OF 5" OR 6" AS ORDERED - SHAPE & DIMENSIONS OF RIBS TO BE SAME AS SHOWN ABOVE

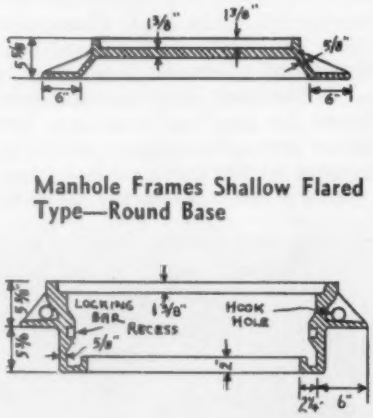
Manhole Frames Flared Type—Round Base


HOOK HOLE
HOOK HOLE
SECTION A-A
FRAMES MAY ALSO HAVE FLANGE WIDTHS OF 5" OR 6" AS ORDERED - SHAPE & DIMENSIONS TO BE THE SAME AS SHOWN ABOVE

Manhole Frames Flared Type—Square Base

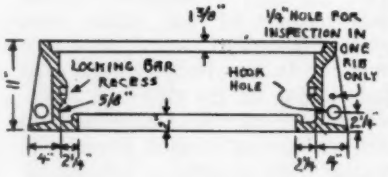


Manhole Frames Straight Type—Round Base



Manhole Frames Shallow Flared Type—Round Base

Manhole Frame Shallow Straight Type—Square Base with Inner Seal and Locking Bar



Manhole Frame Straight Type—Round Base with Inner Seal and Locking Bar

Inner Cover or Seal

The most common material used for manhole frames and covers is a gray cast iron, although carbon steel is sometimes substituted. On 33", 36" and 42" sizes, cast carbon steel is recommended. It also produces a better quality of casting for the finished cover without the necessity of machining.

Displacement of Cover

Movement of a manhole cover causes wear, objectional noise and dislodgment of the cover which may cause damage or injury. Improvements in casting methods and procedures have resulted in cover castings which fit the frames closely but a worthwhile safety insurance is machining the covers and seat. No machined cover should be installed which can be rocked.

The wear caused by movement of the cover may require replacement of the seat as well as the cover and this is expensive compared with the small added cost of machining. With a closely fitted machined cover wear will occur on the top surface only, and replacement will be confined to the cover itself.

The use of a plastic material to fill the space between a frame and cover is not recommended, although frequently used. Such material usually

has a filler the purpose of which is to prevent the plastic from running in warm weather or cracking in cold. The plastic used on manholes located in any place but private property should not stick to shoes. Each time the cover is removed all of the plastic should be removed from both the frame and cover, and renewed. The removal of the plastic is a precaution against nonuniform seating of the cover upon the frame. Should the plastic tilt the cover slightly, traffic may knock it out of the frame or pedestrians may trip upon the portion projecting.

Space Between Cover Edge and Frame

The tolerance which is usually allowed in casting does not provide a desirable tight fit between the edge of the cover and the frame. This space, unless filled by a plastic, will allow a sidewise movement which will cause wear on the frame and cover sides, on the cover seat and on the undersurface of the cover. The space between the frame and cover may become filled with foreign matter; and the formation of ice in the winter time may make removal of the cover difficult. To protect against these conditions it is desirable to have both the cover and frame machined to a close fit. On round covers a difference in diameter between cover and cover compartment of the frame, of only 1/16" will allow sufficient clearance for ease in cover removal and minimize the difficulties mentioned. With machined covers and frames the cover may be placed in any position and turned through a complete revolution without difficulty and at no point should the clearance be in excess of ⅛".

Square Frames

The above dimensions pertaining to round frames apply in practically all instances to square or rectangular frames.

The round manhole covers may be used in connection with round bases, or when flared, the base may be square. Round manhole covers and frames require less metal for unit of area of opening than any other shape. Round covers are more easily handled than square or rectangular types. Round covers are less subject to breakage during handling as there are no corners; and when the corner of a square object is struck the intensity of the blow is concentrated at a point or along a line, and the intensity can not be rapidly distributed. The machining of round covers is simpler than that of square or rectangular.

Ventilating Holes in Cover

Ventilating holes in covers are a general practice except where water conditions require that the cover be sealed. The primary purpose of the holes is to improve the ventilation of pits, and this feature alone warrants adoption of the practice as a safety measure unless surface water conditions are extreme.

In addition to ventilation, an added safety feature of the holes is their convenience for the insertion of tools to remove the cover. The more holes, the greater the selection the workman has of a place on which to stand during removal of the cover; this again adds to safety, as the position taken can be determined by traffic dangers. The simultaneous use of two holes diametrically opposite when removing the cover reduces the possibility of injury to workmen.

A common practice is to provide holes in all covers, and where water conditions are adverse, to fill the holes with a macadam or similar material to protect against the water and yet to maintain the safety features of holes for cover removal.

Inspection of manhole atmospheres is a general practice and usually taken before removing the cover by inserting a tube through a hole in the cover. When an inner seal is used the inner seal cover must be removed at least partially, thus mixing air with the manhole atmosphere before a sample has been secured. At least one company drills ventilating holes in the inner seal cover and fills these holes with a plastic. When it is desired a sampling tube may be inserted by taking out the plastic.

Inner Seals

Where water conditions are particularly adverse the regular type of cover without holes or with sealed holes may be inadequate to eliminate the entrance of water to the pit. A water tight inner seal, in addition to the regular cover, may then be necessary. The inner seal is of much lighter construction than the cover exposed to traffic, since it is subject only to the strains of manufacture and handling. There are various methods of securing a water tight joint but the usual one is to provide a rather wide metal seat on the inner seal on which sealing compound is spread. The curved type of inner seal cover is the most common. Experience has warranted its preference due to manufacturing conditions and to a minimum of breakage during handling.

Water may accumulate between the top cover and inner seal; and during freezing weather the ice formed is then sometimes difficult to remove. Inner seal covers with a diameter considerably less than that of the frame are preferable, as they provide space which facilitates the removal of ice and permits tools to be inserted under the cover to break the seal. For the purpose of lifting, handles are provided on the inner seal cover. It is desirable that there be two of these so that workmen may lift the cover evenly. Foreign matter carried in by water or sifting in between the frame and top cover usually causes an accumulation of very fine dirt or mud. This should be cleared out before removing the inner seal cover, as otherwise this foreign matter will gradually accumulate in the pits and result in undesirable working conditions and appearances.

With certain utilities the use of inner seals is practically standard, but in the gas industry their use has generally been confined to those locations where they are absolutely essential. If at all possible, it is best not to place regulator or other types of pits where an inner seal will be necessary. It is preferable to go to a dry location. Any added investment will ordinarily be offset by the decreased maintenance. Where water conditions detrimental to a regulator exist, crews must usually be dispatched to the location during or immediately following each rain or flood condition. As an added precaution where pits may occasionally be flooded, all parts of the regulators likely to be affected by water, such as the top of diaphragms, are sealed off with special equipment integral with the regulator and vents carried above any possible water level.

Installation

Pits are designed to avoid any overhang of the foundation or supporting members by the flange bearing area. With an overhang there is an unequal distribution of load on the bearing plates and an increased possibility of damage to the flanges during construction of the pit or during the exposing of adjacent roadway by other utilities following construction of the pit.

During installation of the manhole the elevation should be secured in the field from the engineering forces of the political division, to eliminate as far as possible later differences as to either the actual grade to be used or errors in the establishment of the

(Continued on page 66)

Pressure Regulation For Appliances*

by

Allen D. MacLean,

Chief Engineer, Pittsburgh Equitable Meter Company

IN time of warfare, a large share of the productive effort of a nation is directed to the making of ammunition to use against the enemy. Research laboratories, large chemical and manufacturing plants work night and day to produce in large quantities the bullets and shells which are eventually to be used "on the front." The effectiveness of this ammunition in the end will depend to a large degree on the firearms and artillery used to finally send the ammunition on its way to deal death to the enemy.

So it is with a gas company. The manufacture and production of the gas, its distribution and measurement, are conducted to but one end—to be "fired" and produce useful and efficient heat for a great variety of purposes. Here, too, the product must be "fired" through efficient equipment if it is to produce the desired result. The final combustion equipment should be carefully designed and proportioned if satisfactory results are to be obtained. Just as the rifle or field artillery of an army must be designed for the greatest accuracy and power, so must the domestic and industrial gas burning equipment, through which the gas company fires its product, be designed for efficient and trouble-free combustion.

The science of combustion is an important and varied one:—the simple act of uniting the combustibles produced by a gas company with the oxygen from the atmosphere is a problem involving many phases of technical work. The rate of gas input, the method of "entraining" the necessary air, and the control of the entrained, and secondary air, height of flame from burner and other important factors must be carefully considered in evolving a burner design.

The American Gas Association publication in Combustion, mentions in addition to the qualities just listed, the following seven factors.

1—Controllability over a wide range of turndown without danger of flashback.

2—Maintenance of the desired atmospheric conditions.

3—The heat produced must be distributed satisfactorily.

4—Combustion must be complete. Neither carbon nor carbon monoxide should escape from the flames.

5—The flames must not lift nor be blown from the ports.

6—Ignition should take place readily. The flame should travel from port to port without difficulty.

7—The burner should ignite, burn and extinguish without undue noise or puff.

The rate of gas input is a basic factor to consider—the heat produced by a burner depends directly on it, and this rate should be carefully controlled. In Figure I we see a typical burner design in common use. The actual rate of flow of gas will depend on several factors, the most important two being the pressure of the gas above atmospheric pressure at the inlet to the burner orifice, and the size and flow characteristic of the orifice. Flow of gas through any orifice varies with the square root of the differential pressure across the orifice, but in our typical burner installation we have atmospheric pressure at the outlet or downstream side so the differential pressure across the orifice is really the pressure in the gas line just ahead of the orifice, and the flow of gas will depend on the square root of the line pressure. Practically this means that if we have a burner designed to pass 100 cubic feet of gas with a pressure of three inches of water column, and double this pressure to six inches of water, we increase the gas input by the ratio of the square root of six (2.44) to the square root of three (1.73); the gas input under this new pressure will be 141 cubic feet per hour, an increase of 41%.

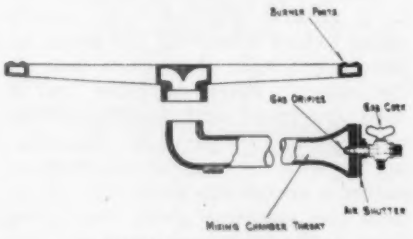


Fig. I Domestic Gas Burner

This increased gas input, if complete and efficient combustion is to be maintained, must be accompanied by a similar increase of air input, also the point of maximum flame temperature, which is always of interest since it bears a relation to the body to which we are applying the heat, will change in location with respect to the burner, for with increased pressure we have increased velocity of the emerging gas and air mixture, and complete combustion is obtained at a point further from the burner. Thus our burner designer, in dealing with a varying gas pressure must face the possibility of obtaining a variable mixture of air and gas, and a variable height of the hottest point of the flame. Air and gas mixture of course affects efficiency of combustion, and flame length affects the efficient application of heat at the most advantageous point. Also, if the flame is higher than provided for in the original design, impingement of the flame on the part being heated interferes with complete combustion.

If, however, the burner designer is assured of an even, continuous pressure, the air ways for entrainment air can be designed at the most efficient location and of the best size; the burner can be arranged so that the body to which the heat is to be applied (whether a coil of pipes, a water boiler, an air space or a cooking utensil) has the most advantageous position with respect to the burner.

Then, too, with an increase of fairly constant gas pressure, design features of the burner can be arranged to insure against flames being blown out, or lifted from the port; with proper ports, designed with constant pressure in mind, ignition will take place easily and surely without undue noise or puffing.

In general there are two groups of domestic burners; one is set for flame length each time it is ignited—a top burner on a gas range, or the familiar non-automatic side arm water heater; the other is not sub-

*Presented at New England Gas Association Meeting, Boston, Mass., Jan. 10, 1936.

ject to manual control and supervision because it is either turned on or off by means of a thermostat or some similar device, or modulated by a thermostat. This last group, because of lack of manual control and supervision is of course benefitted by a device to control pressure to an even value. With the first group where each time the flame height is adjusted when lit, the advantage of accurate pressure regulation is not at first apparent; but we all can recall complaints involving the top burner of a range where flame height is influenced by the oven of the range being turned on or off, or even the operation of some remote appliance such as a water heater or the same piping causing a wide variation in the flame height, and requiring further manual adjustment. Pressure regulation at the appliance will greatly minimize this difficulty.

In order to show the effect of pressure variation on a domestic gas burning appliance we have illustrated in Figure II the efficiency of a normal burner. It will be noted that this particular burner was designed for maximum efficiency at very low inlet pressures, and as the inlet pressure was increased, the actual rate of flow of gas was increased, but the efficiency was found to decrease quite fast with increasing pressure. Also, as the pressure was decreased to a point below that to which the burner was arranged, the efficiency decreased.

A pressure regulator placed on the appliance is the surest and best guarantee that even and satisfactory pressure is maintained at a burner. Distribution pressures, especially in these days of widely varying loads, are subject to fluctuation; house piping, called upon to supply a variety of appliances, a range with oven, and automatic water heater, a refrigerator, sometimes space heater, and even a central heating plant, would have to be excessively large if any one appliance is to receive a fairly constant pressure, as the other appliance loads are varied. Pipe line losses and meter losses vary with the square of the rate of flow, hence we have the possibility of widely varying pressure at any one burner.

With a pressure regulator, installed as an integral part of an appliance, we can eliminate the dependence of appliance efficiency, first on varying distribution main pressure, second on varying loss in the house piping system as various appliances connected to the same house line are turned on or off, and, third, on variation of demand (either automatic or manual) in the appliance itself. Efficient and proper combustion is assured by the proper control of pressure at the appliance.

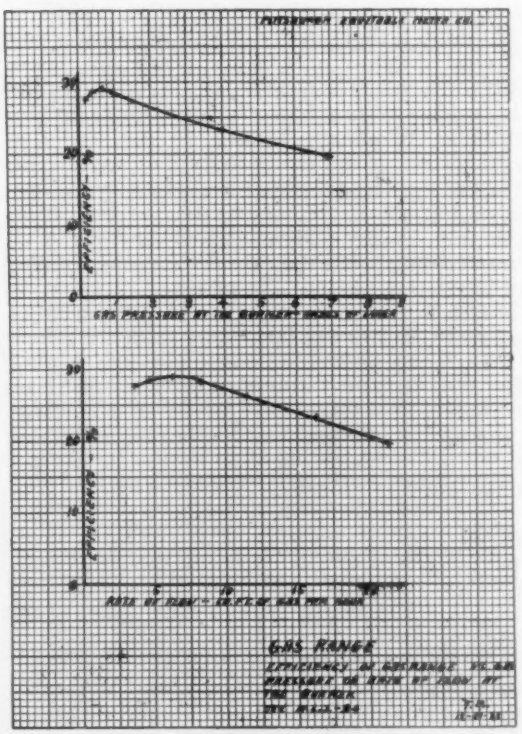


Fig. II

We are probably all familiar with troublesome service jobs on gas burning appliances, ovens which at some times do not give enough heat, water heater where pilot lights are either burning too high or go out, complaints on stove top burners which do not seem to stay put when once set. Service men report satisfactory combustion on calling and making proper adjustment, only to be called back later to find that a peak hour drop in pressure has changed the performance of the burner. Initial and service adjustments made at the pressure which happened to exist at the time, does not give satisfactory service when outside conditions cause a pressure change at the appliance. An assurance of constant pressure which will remain the same after adjustment simplifies the initial adjustment, and eliminates a large amount of service complaints and call backs.

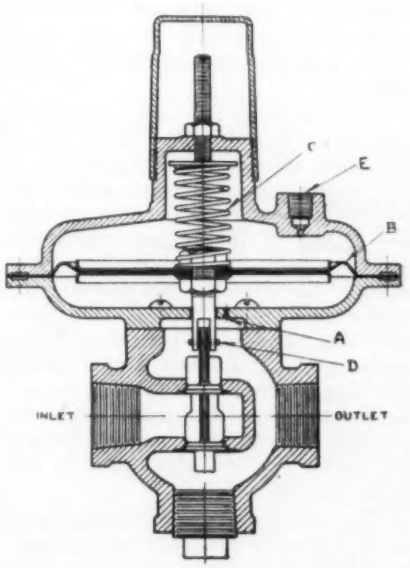


Fig. III Appliance Regulator—Spring Type

Pressure regulators satisfactory for appliances differ somewhat from other types of regulators. For instance, service regulators must be designed for relatively high inlet pressure, usually expressed in pounds, while regulators for appliances are usually subjected on the inlet side to distribution pressures which vary only from 3½ to 10½" of water column. Service regulators will have volume variation from zero to the maximum of all appliances added together; an appliance regulator is seldom called upon to withstand very great variation in throughput although in some cases it is expected to control pilot flows in addition to the heat producing burners. In appliance regulators, too, we are usually interested in seeing that the regulator in its normally wide open position does not absorb too much pressure.

In the actual design of the appliance regulator, because complete shut-off is not necessary, the leverage we are familiar with in service regulators is not necessary, so we have the valve arrangement connected directly to the diaphragm. Also, horizontal inlet and outlet connections in line fit best into the installation scheme on appliances. Typical appliance regulators are shown in Figures III and IV. In one design weight loading of the diaphragm is used, and the other has an adjustable spring system to provide

the outlet pressure adjustment. In one design we have a double valve to minimize the effect of inlet pressure variation, in the other a single valve is used. In general, because complete shut-off is not required, it is considered satisfactory to use hard valve material instead of soft valve material.

The working of the appliance regulator is simple. The outlet pressure, which is being controlled, is led under the diaphragm where its total upward effect is counteracted by the spring or the weight, whichever type is used. The valve being connected directly to the diaphragm, moves upward to decrease the flow and thus the outlet pressure if the outlet pressure (which is also under the diaphragm) tends to increase. Conversely, lowering outlet pressure permits the weight or spring to open the valve further, thus raising the outlet pressure.

The main purpose of the regulator is of course to maintain as constant as possible outlet pressure, no matter what volume input the appliance is called upon to handle, and no matter what inlet pressure variation the regulator is subjected to. Standards of performance are specified by the A. G. A. Laboratory. Specifications and performance requirements have been recently published for appliance regulators—intended to set up physical specifications and tolerances of performance under conditions normally met with.

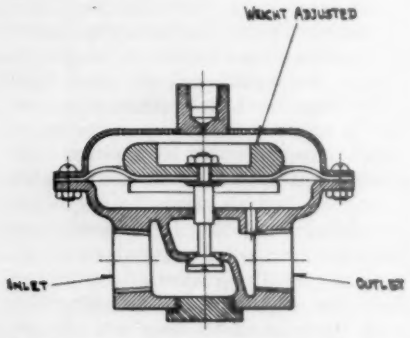


Fig. IV—Appliance Regulator. Weight Adjusted

Briefly, the requirements for appliance regulators are determined by examining rate of flow versus outlet pressure curves by means of which regulator performance is usually expressed. For each given size of appliance regulator a "setting" rate of flow is specified, then with the inlet pressure held at seven inches of water, the outlet pressure is adjusted to its desired value with the specified throughput. This setting rate is given in the following table.

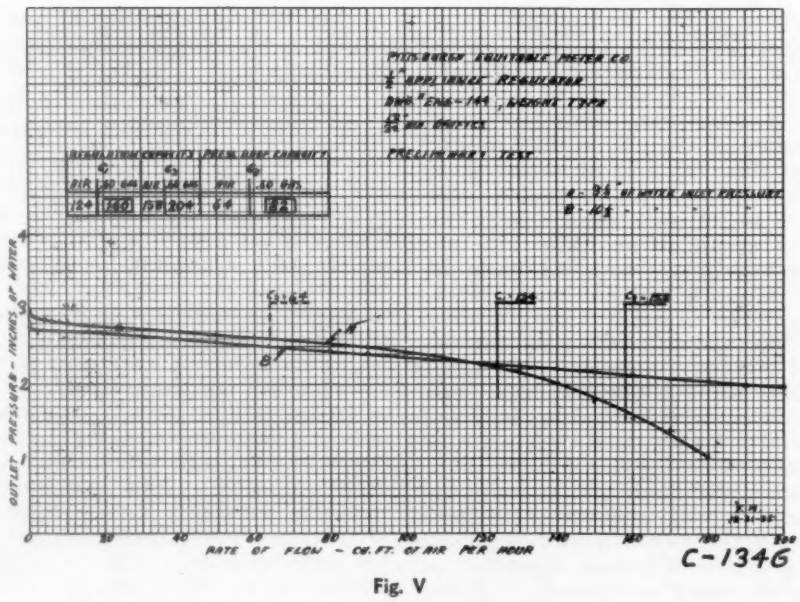


Fig. V

Nominal Pipe Size of Regulator (Inches)	*Throughout (Cu. Ft. Std. Gas)*
¼	10
⅜	15
½	30
¾	50
1	100
1¼	180
1½	275
2	450
2½	700
3	1000

No further adjustments are made. Then with an inlet pressure maintained at 10½" of water, the rate of flow through the regulator is varied by steps, and the outlet pressure for each step noted. This can be expressed by one of the curves shown in Figure V. The same procedure is repeated with the inlet pressure maintained at 3½" of water column. From these two curves can be determined the regulation characteristics of the regulator. The effect of inlet pressure variation can be readily seen by observing the difference in outlet pressure between 3½ and 10½" curve for any rate of flow. The effect of varying volume can be determined from the slope of the curve, i. e., a horizontal curve would indicate no variation in outlet pressure as the volume changes.

It will be found that for practically all appliance regulators (not service regulators) there is a slight decrease in outlet pressure as the rate of flow increases. This tendency (more pronounced in spring type than in weight type) can be explained mainly by three effects. Increasing volume means, first, a more widely opened valve, therefore a lower diaphragm position, which means greater *effective* diaphragm area, therefore less pressure per square inch to counteract the diaphragm downward force; second, a pressure drop into the outlet line from the regulator body, which increases as the rate of flow increases, (since the pressure in the body of the regulator is the pressure under the diaphragm, the pressure in the outlet line when we should measure outlet pressure, is less than this controlled pressure by an amount equal to the loss of pressure in the outlet connection); and, third, with a spring type, the lower diaphragm position coincidental with increased volume, means an extended spring exerting less downward force on the diaphragm.

If we really study the meaning of this performance curve for an appliance regulator, we find that it in reality tells just about all there is to be told about the performance of the regulators. The effect of variation in inlet pressure between 3½ and 10½ inches can be readily seen, the effect of volume of outlet pressure is also apparent at a glance. The only feature which the curves do not show is just how much of a restriction the regulator might be in the line in case of an insufficient inlet pressure. Occasionally in distribution work, the outlet pressure is unavoidably lowered to a point below the outlet setting for which the regulator is set. The valve should fall wide open under this condition, and the passageway through the regulator should be as free as possible so as not to absorb too much pressure. To test this feature, the standard A. G. A. test calls

(Continued on page 60)

AS THE EDITOR SEES IT

This Matter of Competition Once More

ARE any of our readers in a sublimely peaceful situation where competition has not yet knocked at the doors of their customers and sought to oust that tried and faithful servant, gas? If anyone believes he lives in such a Eutopia, let him close his roll-top desk for a few days, get out the horse and buggy and make the rounds of his customers. If he still can find no competition we urge that he write, long hand if need be, and tell us how he has succeeded in keeping it away. Most of us have competition just as we have automobiles and typewriters and taxes. For most of us in the gas business competition is our greatest problem. That is why we keep coming back to it.

At the recent Conference of The New England Gas Association, Mr. Herman Russell, President of Rochester Gas and Electric Corporation and Vice President of American Gas Association, brought forcefully to the attention of those present the competitive situation with which we are faced. "Gas," he said, "has long been in competition with oil and coal. There is nothing new about this competition except that the coal and the oil industry, driven by the spur of necessity in one case and a temporary surplus in the other, have risen to the occasion, put their brains to work, developed appliances suitable as to efficiency and cost for domestic and commercial application; put into operation extensive and intensive selling and advertising campaigns—in short, they have gone out to get the business. But more disturbing still has been the encroachment of the electric industry into this sacred gas field. What about that? Need I tell you that last year there were sold in the United States 215,000 electric ranges and 150,000 water heaters, and these were not sold in territory where there was no gas. Far from it! Electric range sales in 1935 in Milwaukee were 1,450; Hartford about 2,300; San Francisco 3,037 and 2,259 water heaters; Albany 2,000; Washington 2,042 (11 months); St. Louis 2,500. These examples are indicative of what is going on in gas territory.

"What has happened? Is electricity for cooking or water heating cheaper or more efficient or better in any way? You know it isn't. . . . The Association (A.G.A.) Laboratory tests show that in a typical family the B.t.u. cooking ratio, gas vs. electricity, is 2.07 and in a limited income family, 1.80, or an average of 1.93. On this B.t.u. ratio basis, 100 Kw. hr. of electricity as a cooking medium are equivalent to 1,227 cu. ft. of gas of 537 B.t.u. content, or $1.00 gas is equivalent on a cost basis to electricity at 1¼c per Kw. hr. The M.I.T. tests show that for water heating the ratio of the thermal requirements is 1.3. This means that the equivalent of a Kw. hr. in the form of gas for water heating would be 4,436 B.t.u. or 8.31 cu. ft. of 537 B.t.u. gas, or with $1.00 gas, the equivalent for electricity is 8 mills. As pointed out by Mr. Suffron, (of the A.G.A. Laboratory), the relative costs of cooking identical meals with gas and electricity is on the average about 2½ times greater with electricity than gas, and from the standpoint of maintenance of equipment, gas has the advantage. Other claims for the electric range, such as less food shrinkage, are not borne out by actual test.

"The cost of heating water by electricity under rates commonly prevailing for this service, is on the average at least double with electricity, and maintenance costs are higher."

Mr. Russell stated that the amount of service used in the average Rochester home has been found to be as follows:

Lighting, 30 Kw. hr. per month	
Cooking, 125 Kw. hr. per month	1,530 cu. ft. per month
Waterheating, 350 Kw. hr. per month	2,740 cu. ft. per month
Refrigeration, 50 Kw. hr. per month	1,800 cu. ft. per month

Applying rate schedules to the above quantities gives the following:

Service	Combination Gas & Electric Rochester Rates	Electric Only Rochester	T.V.A. Rates
1. Lighting and cooking	3.34	6.33	3.60
2. Lighting, cooking and water heating	6.08	11.58	6.92
3. Lighting, cooking, water heating and refrigeration	7.67	12.38	7.12

"If, then, the use of electricity as a domestic fuel in competition with gas is socially and economilly unsound," continued Mr. Russell, "why is it that our cooking and water heating and industrial markets are being invaded? The very future of the industry is threatened. What is wrong and what are we going to do about it? The answer lies in the cure. I believe there are five things that must be done and done quickly:

1. **We must tell our story to the public in every possible way.**
2. **We must replace old, inefficient equipment, ranges, water heaters now in the homes of our customers, with modern appliances.**
3. **We must make our gas rates more promotional, thereby enabling us to hold and secure the profitable business.**
4. **We must improve the efficiency and performance of our ranges and other appliances.**
5. **We must develop new markets."**

The immediate answer to the first point would seem to be unreserved support for the National Advertising Campaign, expansion of the "Mystery Chef" radio programs, the success of which are exceeding expectations, and vigorous local advertising campaigns using newspapers, radio, direct mail, window displays and screen. As Mr. Russell points out, the local and the national campaigns should be coordinated and continuous.

Point Number 2. The replacement of out-of-date appliances is a job for the sales department. We expect to have more to say on this in April.

Point Number 3. "The gas fraternity has been slow to move in the way of bettering their rate structures," said Mr. Russell. "The time has come when the gas industry must have the courage to face the first losses due to rate changes, knowing that greater loss will result from loss of business to competitive fuels unless these reductions are made. In many cases it will be necessary to have the courage to raise many small, unprofitable customers in order that the cost be more equitably distributed and those customers benefited who are profitable and for whose business the competition is the keenest. This applies particularly to water heating and some commercial customers." We feel that even more is needed,—a lower level of costs, and hence rates, as well as a more promotional structure. We fear that public authorities will be reluctant to allow us to increase the cost of service to the small customer regardless of the justification for it. Finally we believe much can be done to strengthen our competitive position, and at

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Sliding Scale Arrangement

For Washington Gas Light Company and The Georgetown Gaslight Company

THE "sliding scale arrangement" proposed by Washington Gas Light Company and The Georgetown Gaslight Company, and approved by the Public Utilities Commission of the District of Columbia, which became effective December 16, 1935, terminated several years of valuation and rate proceedings.

At the same time an entirely new and generally lower schedule of rates also became effective. These new rates were estimated to save gas consumers in the District of Columbia $850,000 per year when compared with the rates previously on file, and $305,000 per year when compared with the temporary rates in effect since August 1, 1932.

This "sliding scale plan" is in effect similar in principle to that under which the Potomac Electric Power Company has been operating for some years and which has come to be commonly known as the "Washington Plan." Rates are to be reduced annually if rate of return on the "Rate Base" plus "Working Capital" increases over 6½% or to be increased if it decreases under 6½% in accordance with a definite scale incorporated in the plan.

Rate Base

The initial Rate Base is fixed at $21,000,000 as of June 30, 1935, but does not include Working Capital, which latter as of said date was taken to be $750,000.

Retirement Reserve

The Retirement Reserve appropriation is increased and is now to be accrued at 1¾% yearly of the Rate Base until such time as the Retirement Reserve equals 10% of the Rate Base. When this occurs, the percentage is decreased to 1¼% of the Rate Base.

Allocation of Property Income and Expenses

The plan provides for the allocation of property used for gas service within the District of Columbia as distinct from the property used to serve territory outside the District of Columbia, and the adjustment of revenues and operating expenses to reflect income from and the expense of rendering that service to consumers in the District of Columbia only.

Determination of Rate Changes

If earnings after deducting adjusted operating expenses, and accruals for Retirement Reserve, Uncollectible Bills and Taxes exceed 6½% on the Rate Base in any "Test Year" there is to be applied to rate reductions during the following "Rate Year" an amount not less than 50% of such excess and larger portions as the rate of return earned rises.

If rate of return falls between 6 and 6½% for but one "Test Year" no increase in rates is to be allowed in the succeeding "Rate Year," but if for two consecutive "Test Years" it falls within these limits, then the full amount of the deficiency the second year is to be applied to rate increases the following "Rate Year"; if rate of return is 6% or less but more than 5½%, then but ¾ of the similar deficiency is to be applied; if 5½% or less, then 5/6 of the deficiency is available for rate increases.

"Test Years" and "Rate Years" are defined as the twelve months' periods ending June 30 and August 31 each year, respectively.

Constitutional Rights Reserved

The Constitutional Rights of the parties interested as well as their respective rights under the Act establishing the Public Utilities Commission, as amended, are expressly preserved by the plan.

Termination of Plan

Either the Commission or the Companies may terminate the plan upon ninety (90) days' notice.

Gas Hair Dryer Standards Prepared for Final Action

Taking the final steps necessary in the development of initial standards for the construction and performance of gas hair dryers prior to review by the A.S.A. Sectional Committee, Project Z21, A.G.A. Approval Requirements Committee in April, the Subcommittee on Approval Requirements for Gas Hair Dryers met at the Cleveland Testing Laboratories of the Association on January 31, 1936, considered all comments received on the tentatively proposed standards, and effected several more or less minor modifications of requirements. Three days previously, on January 28, the four members of the subcommittee who are now located in California had met at the Pacific Coast Branch of the Laboratories in Los Angeles, registered their opinions on certain points, and forwarded their votes to Cleveland. As the result of these two sessions the Sectional Committee may now act finally at its spring meeting to approve standards for testing and certifying a new type of commercial gas appliance—the hair dryer.

Essentially the Tentative Approval Requirements for Gas Hair Dryers printed last November and distributed for criticism to all interested persons and organizations, were found ample and satisfactory. They constituted the most thorough-going original set of standards for a class of gas appliances yet proposed, and represented much preliminary research and committee work. Fortunately the hair dryer group had the benefit of the experience of some thirty other requirements subcommittees as a basis for its work in drafting approval standards for gas hair dryers.

Among those few changes made at the January 31 meeting, however, were:

1. Amendment of the requirement specifying automatic means to shut off the gas supply in the event of fan stoppage by admitting of air temperature limiting features performing equivalent functions. Also there was added a performance test which provides that the fan be stopped, the appliance operated for an hour, and then the fan started again, during which time helmet air temperatures shall not exceed 160 degrees Fahrenheit.
2. Revision of the fire hazard test to cover the condition of operation with stopped fan.
3. Numerous revisions involving manifold pipe size, manner of application of room draft test, and phraseology.

It is significant that, after long discussion, it was decided to retain the proposed clause requiring thermostatic control on all hair dryers, either multiple or single helmet.

N. J. Reiff, Appliance Laboratory, The United Gas Improvement Company, Philadelphia, is chairman of the hair dryer subcommittee.

Building A Gas Load Through Dealer Cooperation*

By A. L. McKinstry

Cedar Rapids Gas Co., Cedar Rapids, Iowa

Why Did We Adopt A Retail Sales Plan?

DUE to a local competitive condition we were forced to investigate various plans and programs that might accomplish definite results in a relatively brief period of time. The result of our investigation caused us to adopt the Rental-Sales Plan on gas ranges that we put into effect in Cedar Rapids, Ia., just six months ago.

Frankly, we entered the program defensively. Only after it got under way we surprised even ourselves and instead of considering it as a defensive program, we have discovered at least some of the real possibilities that the Utility Company Sales Department accomplishes, and we are definitely rental-sales plan conscious!

And in the first two months our plan was in effect we accomplished twice as many unit sales as our competition had accomplished in nearly two years of a rental plan on competitive fuel.

And so we are thankful to competition for giving us inspiration and urge for adoption of the plan. That is the way of it—and now we'll give you the HOW and some of the RESULTS of our rental-sales campaign in Cedar Rapids.

First 18 Days Of The Plan

With 12,250 domestic gas meters, we sold 400 gas ranges at $75.00 each in the first 18 days. Every sale was free from Trade-in.

How did we do it? I wish to discuss with you the various provisions of the dealer agreement with the Cedar Rapids Gas Company, under which we began operating, as well as explain what we have discovered through actual operation of the program, now just concluding the sixth month of united effort.

By way of introduction, permit me to suggest that this program is a three-sided affair—with The Cedar Rapids Gas Company, the Retail Merchants Participating—and the Newspapers—all three vitally involved for mutual benefit.

The actual written agreement between participating dealers and the Gas Company is neither elaborate nor involved. On the contrary it is simple, concise and effective.

Not The Only Plan

This plan exemplifies in a business way what the bewitching maiden lady described as the difference between dignified acquiescence and enthusiastic cooperation.

Admitting there undoubtedly are many effective ways to accomplish the end of load building for the Utility Company, I want to explain details of the plan we are following, because we are demonstrating that this program can be adopted and carried out in every community. We make no claims to extreme originality, no attempt to intimate that we are wand-waving magicians, nor even that we fall in the category of a brain-truster. Our plan, like any successful and profitable plan, involves the basic element of a hell of a lot of good old fashioned work on the part of everyone concerned with the program, but we are finding the results justify the effort expended. This is a workable plan. If you find any beneficial suggestions in our discussion; if it paints the picture of profits and benefit for you in your local problem, then I feel rewarded for the effort expended in this discussion.

And So, Let's Take Up This Agreement, Point By Point

The first Point of the agreement reads as follows:

"1—THE PLAN INCORPORATES THE USE OF A SPECIFIC GAS RANGE MODEL, ACCEPTABLE TO THE GAS COMPANY WITH REGARD TO FEATURES OF CONSTRUCTION AND SPECIFICATIONS, AND TO RETAIL AT $89.00 ON A RENTAL-SALES BASIS."

This paragraph was inserted to insure a high quality gas range being used, to be certain of customer satisfaction and reduce the Gas Company's service calls after installation. It includes retail cash purchase price and carrying charge.

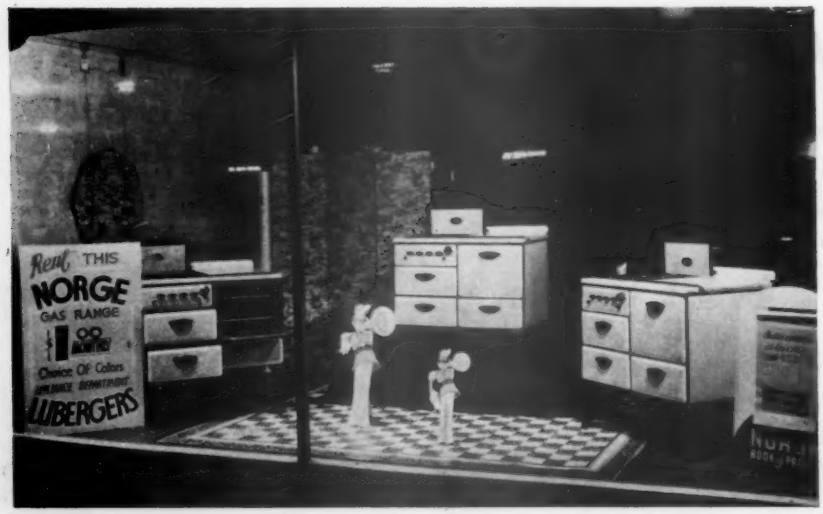
Builds Gas Load 15%

At this point, let me cite just one actual example of what has happened in Cedar Rapids under this plan:

One gas customer living in a rental house, in which the landlord has a gas range, had been finding average monthly gas service bill more than $4.00. He had mentioned to me that the bill each month seemed to be high and inquired about the optional rate. Check up revealed the customer was being served on that rate. His attitude was one of "bowing to the inevitable," that although nothing apparently could be done about it the Cedar Rapids Gas rates were plenty stiff. He admitted having faulty gas equipment, but felt unable to install a new gas range and other appliances due to financial outlay that such purchase might involve.

When our Rental Plan was put in effect this particular customer bought under rental-purchase contract, a new Roper gas range—and at the same time added an Electrolux installation—a NEW appliance to the house. At the end of a month the gas service bill had been increased 63 cents—or about 15%—but in such a way that the customer was elated, anticipating that the increase might at least be double what it actually was, and proving to himself that faulty equipment originally in use was a money waster for the consumer.

*Presented at the Mid-West Regional Gas Conference, Feb. 13, 1936.



Dealer Window Display

Change In This Consumer's Attitude

The housewife in this particular case was happy, because she said it was the first time in three years she had been able to obtain certain and uniformly satisfactory results in baking. Instead of feeling the Gas Company is a horrid "Octopus," this family has become an enthusiastic Gas Company booster, appreciating the opportunity afforded them by this gas Utility Company, and confident that even gas heat need not be excessively costly with good equipment. For next year we hope to have a gas heat installation added to that household, making still further load increase for us. That is just one random example.

Down Payment

Now then, let's study Point 2 of the Dealer agreement:

This paragraph of the agreement reads as follows:

"2—THE.....BLANK & CO. ....IS AUTHORIZED TO SELL THE CUSTOMER ON THE BASIS OF $1.00 DOWN PAYMENT PLUS $1.39 TAX TO BE COLLECTED BY.....BLANK & CO. .....AT THE TIME OF THE SALE, AND, $1.00 A MONTH PAYABLE WITH THE MONTHLY GAS BILL OF THE CEDAR RAPIDS GAS COMPANY, OR IF DESIRABLE, AT THE OFFICE OF.....BLANK & CO.....IN WHICH CASE THE.....BLANK & CO.....WILL REMIT SUCH COLLECTIONS TO THE CEDAR RAPIDS GAS COMPANY ON THE LAST DAY OF EACH MONTH."

Explanation Of Point 2

By way of explanation, first of all this met a competitive condition. The dollar is low enough to allow the customer to add some other installation, such as Electrolux, automatic water storage heater, rug, washing machine, or some sizable item in other goods. This is vital. It insures a satisfied consumer for the Gas Company and from the cooperating dealers' viewpoint it means they have a chance to sell other goods, too, which the prospect can pay for and when that point is stressed to the dealer he is enthusiastic about working in this cooperative program.

The dollar price is sufficiently low that while it actually is a purchase, the customer doesn't feel he has tied himself up too greatly to balk on the deal, and besides it makes the public feel they cannot afford to be without new, modern, efficient gas equipment free from service complaint possibilities.

The low monthly payment of $1.00 is justifiable in that the quality of the Gas Range involved insures that it will stand up in service and the elimination of costly service during a period of five or ten years would liquidate the account on each stove.

Eliminates Service Calls

Our Shop Department's records show that it actually costs us $1.00 for each service call on gas ranges, and with these installations eliminating service calls our Service Department's expense will be greatly reduced and our general operations more advantageous.

Inasmuch as 95% of the customers, under this plan, actually request that the dollar a month be paid with their gas bill in our office rather than pay it at the store of a dealer, it indicates that the public does want the Gas Companies to continue Sales Departments and afford convenience of Merchandise Departments in conjunction with service accounts.

The optional privilege of payment at the Gas Office or Dealer's store was incorporated into our plan so that dealers had no possible complaint that they lost contact with customers. It makes the dealer feel he has a chance to show the customer other merchandise when the customer goes to the store to make a range payment, if so inclined.

Cash To Dealer

And now for paragraph 3 of the agreement, which reads:

"THE.....BLANK & CO..... WILL RECEIVE IN CASH, $69.50, ON TENDERING EACH RENTAL CONTRACT TO THE CEDAR RAPIDS GAS COM-

Dealer Floor Display

PANY ON INSTALLATION OF A RANGE."

That gives our office opportunity to check each installation and put our serial number on the range and on the order, verifying that the range is as represented before paying the dealer. It keeps the dealer on his toes to follow through on the job to be sure of getting his money, thus avoiding any "buck passing" of grief to the Gas Company.

Profit For Dealer

From the dealer's viewpoint, when he gets cash on completion of the transaction, he is operating on a highly profitable basis, getting real turnover on his merchandise, and is encouraged to exert extra effort on gas stoves; to push gas sales at all times, and the more we can have gas appliances being pushed on the sales end, the more gas load we're going to build. This arrangement, as cited in this paragraph of the agreement, also eliminates collection worries for the dealer, thus preventing him from slowing up on gas range promotion. Every day in the month he can go after volume of sales with confidence and enthusiasm. This is a great aid to the small dealer, who might be handicapped by lack of cash with which to carry on the great volume of business that he can do under this plan. It builds good-will toward the Gas Company among the cooperating dealers and makes the dealers good-will salesmen for the Gas Company with the consumers.

Installation Fee

Paragraph 4 of the Rental Sales Agreement between dealer and Gas Company states:

"4—THE CEDAR RAPIDS GAS COMPANY AGREES TO INSTALL, AT A FLAT PRICE OF $2.75 EACH, ALL GAS RANGES. THIS INCLUDES UP TO 15 FEET OF PIPING. THIS PRICE COVERS INSTALLATION ONLY. THE....BLANK & CO....AGREES TO DELIVER AND UNCRATE THE GAS RANGES."

I might cite here an interesting sidelight on this particular clause in the agreement is that the participating dealers were glad to pay this installation price, and their attitude was in marked contrast to a previously manifest attitude of disgruntlement that the Gas Company's Service Department should require any payment whatsoever for installation work. This has helped to iron out that minor element of discord.

Speedy Installation Important

However, the dealers are encouraged by us to turn over installation work to plumbers, creating additional work for plumbers and making a feeling of good-will from that element of the community toward the Gas Company.

Speedy installation is important and in this campaign we have found our Service Department taxed to the limit in demands, so that the aid of plumbers is absolutely necessary to keep the program going smoothly.

Collections and Credit

The fifth clause of the agreement is self-explanatory. It reads:

"5—THE....BLANK & COMPANY'S...:LIABILITY CONCERNING COLLECTIONS ON THESE RANGES CEASES WHEN THE CONTRACT IS TURNED OVER TO THE GAS COMPANY."

Paragraph 6 of the agreement reads:

"6—THE CEDAR RAPIDS GAS COMPANY ORDINARILY WILL APPROVE CREDITS WHICH HAVE BEEN APPROVED BY THE CREDIT DEPARTMENT OF.....BLANK & CO....., BUT THE CREDIT DEPARTMENT OF THE CEDAR RAPIDS GAS COMPANY WILL HAVE THE PRIVILEGE OF PASSING ON SUCH CREDITS SHOULD IT SO DESIRE."

That is a protective measure for the Gas Company, giving the dealer initial credit responsibility in the whole transaction.

No Trade-Ins

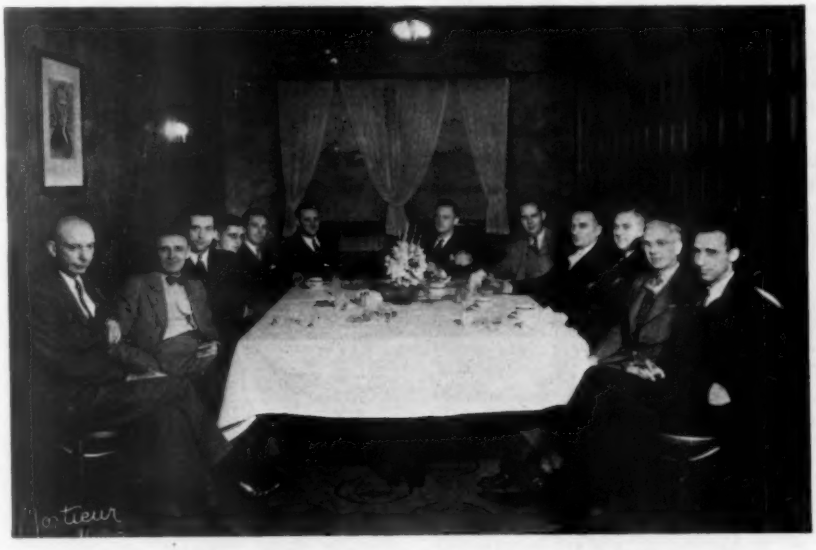
Here's Point 7:

"7—THERE WILL BE NO TRADE-IN ALLOWANCE ON RANGES SOLD ON THIS PLAN."

That removes entirely the bugaboo of trade-ins, and is a big, constructive step in elimination of a dangerous and vicious competitive factor, and makes cutthroat competition impossible. Customers gladly let the junk man have the old stove.

Paragraph 8 of the agreement reads:

"8—THE CEDAR RAPIDS GAS COMPANY AGREES TO ADJUST, INSPECT AND MAINTAIN IN SATISFACTORY OPERATION FOR THE CUSTOMER, GAS RANGES SOLD UNDER THIS PLAN."



Luncheon Meeting Gas Company Officials and Participating Dealers.

Uniform Contract Forms

The ninth clause is:

"9—THE CEDAR RAPIDS GAS COMPANY WILL FURNISH CONTRACT FORMS TO BE USED FOR THESE RENTAL RANGES."

It is important that a uniform sales contract be used by all participating dealers, as every contract passes to the Gas Company. I will be glad to send a copy of the actual form we are using, to anyone who writes me requesting it.

I might also explain that our Bookkeeping Department set up a separate ledger, indexed by dealers, with an entry for each range sold, so that we have constant tabulation available as to how many stoves and how much money actually concerns each individual dealer. On our general ledgers the entries are made under the classification of Appliance Accounts Receivable.

Advertising Control

And the last paragraph of the agreement is:

"10—THE.....BLANK & CO ....HEREBY AGREES TO CO-OPERATE ON ADVERTISING, MUTUALLY AGREED ON AND CONFORMING TO GROUP POLICY."

It is imperative that a controlled advertising policy be adopted. This keeps the individual dealers in line and prevents dealer friction. It can prevent merely shouting price, price, price. Not once in our advertisements has the price of a gas range been mentioned. It is not necessary!

And there, gentlemen, is the dealer agreement. It is brief but important. Now then let us consider a summation of this progress, taking into account each of the three participating factors—Utility Company, newspaper and cooperating dealer.

Summary: What Have We As a Gas Company Accomplished?

1—The first 60 days our plan was in effect there was a total of 550 new gas ranges sold on the rental-purchase plan. There were 65 new gas meters installed in the first 30 days in homes that previously had been all-electric. For the six months' period there have been a total of 600 new gas ranges put out on the rental-purchase plan, in addition to a decided increase in sales of still better models at prices higher than the rental plan type.

2—It has brought good equipment within the reach of gas consumers with relatively limited budgets.

Raised Unit Sale Price

3—For the benefit of the dealer it has greatly raised the unit price of gas range sales among dealers, yet has given the consumer more stove for the money than ever before in Cedar Rapids.

4—This program has practically eliminated the $39.00 and $49.00 retail type of merchandise from the market, which means eliminating much future grief for our Service Department.

5—We are removing the temptation of unsatisfactory junk equipment from the market—the old, faulty stoves are not wanted, and I'll prove it to you!

Into the Stove Department of one of our participating dealers came a man and wife, explaining to the salesman they wanted a second-hand gas range, one at about $7.00 or $8.00.

Eliminates Second-Hand Stove Dealer

Informed that the store had no such stove available, the hopes of the couple dropped decidedly for a moment, but that stove salesman was on the job. Here's how he handled it:

"You don't want such a stove as that" said the salesman "when you can get one of these brand new gas ranges under the rental plan. Let me show you the stove and explain the details of this plan."

He demonstrated the stove, and explained how for just $1.00 a month this couple could have a brand new, satisfactory gas range. The result was a $69.50 stove sale for the salesman, and a satisfied customer for his store—and for us.

Gas Water Heater Prospects

Under this plan, through the customers getting efficient range equipment installed, in many instances we feel they are being developed into real potential gas heat customers for next Fall, and for automatic gas water storage heater equipment too. The Cedar Rapids Gas Company, incidentally, now has a rental-purchase plan in effect on gas water storage heaters, but not with dealer cooperation as we have on ranges.

Permit me, if you please, to offer just a word of advice to purchasing agents and manufacturers. BE SURE to order often, and manufacturers should be prepared to ship promptly to avoid delay in installation and possible dissatisfaction on the part of the customers. Being able to make installations promptly is vital to assured permanent success of the program. RIGHT NOW IS when these customers want their ranges in the house, for they make up their minds in a hurry that they need a new stove and they get it!

Better Dealer Understanding

6—We feel that this plan has brought about a better understanding on the part of the dealers as to what a Utility Company's methods and needs are in load building. It has created active good-will on the part of the dealers toward the Gas Company.

7—We feel this program has gone far in breaking up the general antagonistic attitude on the part of the public toward Utility Companies, that has been fostered and built up by vicious political propaganda in recent months.

Submerges Competitive Fuels

8—It has demonstrated, we feel, to dealers that a Utility Company is a vital factor in the promotion of their merchandise in the community.

9—The whole program has tied in nicely and effectively with the nationwide program of home modernization, and we've demonstrated that families can be convinced that the proper place to start modernizing is with a new gas range in the kitchen.

10—We feel we have largely submerged public consciousness of competitive fuels.

Raise Monthly Payment

11—I mentioned a change adopted in our original plan. At the end of the first 60 days we found the amount of financing required was far greater than our original anticipation and so we changed the monthly payment to $1.50 from $1.00. The result was as desired—a slowing up without completely stopping the rental-purchase demand and we now are operating on the $1.50 a month payment basis.

So much in summation for the Gas Company. Now, let us consider the newspaper's part in this program.

First, Why A Newspaper In This Program?

Through the newspaper quick and assured forceful attention to the campaign can be obtained with a minimum of delay. It reaches the masses, and this is a volume program.

Newspaper Luncheon

The benefit to the newspaper is considerable in the form of display advertising revenue. It increases advertising lineage and is a new businessmaker for the paper.

To illustrate this, at the end of 18 days the newspaper management in Cedar Rapids entertained the Gas Company officials and participating dealers at a luncheon. This luncheon provided opportunity for group discussion and it showed the newspaper's appreciation of the importance of its part in the campaign. Discussion of promotion activities to be pursued were held at that meeting. The Gas Company insisted that the dealers "write their own ticket" as to extent of effort and agreed to go along on whatever was mutually agreed as satisfactory in advertising. For the period from September 15th to December 15th these dealers adopted a schedule of cooperative advertisements that included four double-page spreads and four full pages, all cooperative, in addition to individual advertisements that dealers ran from time to time.

(Continued on page 62)

"Why National Advertising"*

H. R. Sterrett
New Haven Gas Light Co.
New Haven, Conn.

HISTORIANS will doubtless record 1936 as a year of great significance in the life of this nation. This is destined to be a year of momentous decisions — decisions which will determine to a great extent the future course of the nation, economically, socially, financially. Not only will numerous important decisions pertaining to the welfare of the people as a whole be made, but many business enterprises will be faced in 1936 with the necessity of making decisions of vital importance to their future prosperity. In the latter classification I place the manufactured and natural gas business. I need not describe in detail the developments which, over the past quarter century and more particularly during the last few years, have put the gas industry in the uncalled-for defensive position in which we find ourselves today. You are all familiar with the history of this great industry of ours—an industry which by lack of coherent, aggressive, unified effort is permitting, at an ever increasing rate, unjustified encroachments by our competitors. I think of the gas industry as much like China—a nation which does not sense its inherent potential power—a nation of vast wealth in natural resources,—intellectual, honest, able—but through the lack of a strong, definite national policy, instead of being one of the powerful nations of the world—is being gradually reduced by the constant, aggressive, skillfully planned and executed campaign of an alert competitor.

Picture of Gas Industry

Picture the gas industry today—cooking the meals in 16,000,000 American homes; serving more customers than ever before; selling 1,100,000 gas ranges in 1935, a 30% gain over 1934; more gas ranges sold in one year than the entire number of electric ranges in use after 25 years of promotion; increasing the use of gas for commercial and industrial purposes in 1935 by about 10%; registering a gain of 29% in manufactured gas house-heating sales; promoting gas refrigeration to a point where it now is recognized nationally. These are some of the 1935 accomplishments which may be credited to the gas industry,—and yet—we have failed dismally in impressing ourselves on the national consciousness. Automobile, radio, coffee, cosmetics are just a few of the industries, among which are our chief competitors, electrical appliances and oil burners, that by concerted, coöperative action have made a place for themselves in the public eye nationally. The American people today are more than ever favorably influenced toward those things which have acquired prestige by the use of national media such as radio and magazines. Why is it that the ice industry is about to spend $500,000 in a national advertising campaign, the tea industry $500,000, the Florida Citrus Commission $400,000? Why is it that many other industries among which are those represented by the Oil Burner Institute, the Oyster Institute, the Norwegian Sardine Canners Association, the National Association of Petroleum Retailers, the Milwaukee Sausage Manufacturers' Association and others have planned extensive national campaigns for 1936? It is because they, by research and careful study, have concluded that the only way to obtain country wide knowledge and increased acceptance of their several products is to use the medium of national advertising.

Please understand that, not for a minute, do I think a national advertising campaign will solve all of the problems facing the gas industry—but I do believe that it will go a long way in arousing a national consciousness toward this important industry and will show us to be an aggressive, modern, growing business, determined not just to hold our present volume, but to greatly increase it as time goes on. Due in large part to the direct or implied claims used on a nation-wide scale by our chief competitor in the domestic field, the electric industry, and to our own lethargy, except in a scattered manner, in combating this propaganda—many people to-day consider that gas is outmoded and slowly dying. This should and must be stopped!

Our Sister Industry

Our sister industry while younger, is far more glamorous, more versatile, more attractive than we. She has spent most of her time in other parts of the home, while we have been doing the heavy work in the kitchen and basement. She has persuaded the folks that she is the last word in modernity and has established herself in public favor. She is permitted to spend money lavishly in order to attract the public eye while we are limited to a relatively meager allowance. In the past she has generally been content to let us attend to the more common place and less spectacular tasks in the home, but in more recent years she has been telling the folks, at first with a whispered suggestion, but now in a bold, outspoken manner that she can do our work even better than we can, that there will be no kitchen headaches, no dirty walls, no blackened pans, if *she* does our work; that she is speedy, cleaner, less wasteful, affords more leisure, can prepare tastier and better food, —in fact she evidently wonders how the folks ever got along before her advent in the kitchen. We have been fond of our younger sister, we have admired her glamor and her versatility, but her more recently developed covetousness forces us to speak up for our self preservation. We know that many of her claims and insinuations are unsisterly, unfair and at times I am afraid untrue. We know that our modern methods are just as clean, that we waste no more food, that we provide just as much leisure. We know that the kitchen headaches, blackened pots and crude methods to which she refers, are relics of the days when we ourselves were comparatively new at the task. To-day we know we can do most of the kitchen work better than she can, that we can do it quicker and usually cheaper. Despite these facts she continues to tell the folks otherwise, and she has been so successful in her other tasks about

**Presented at New England Gas Association Business Conference, Feb. 14, 1936.*

the home that they are beginning to believe her. Now she is openly trying her best, by fair means or foul—to have us thrown out of the house, except possibly the basement where she admits the work is too heavy for her—and gentlemen, we *will* find ourselves out in the cold if we do not take steps to remove the mask and assert ourselves. If we can establish our real worth in the eyes of the public, like Cinderella, scorned and derided by her sister, we may in the end be chosen to perform those kitchen tasks to which we are so well adapted. We know, and unbiased investigators have found, that in the home gas is surpassed by no other fuel. Better, and in most cases cheaper cooking can be done with gas than with electricity, and certainly electricity can honestly claim no real economies in competition with to-day's gas water heating and gas refrigeration. If this is so—if we believe it—why not "tell the world?" The superiorities of gas fuel have been overlooked by the public—because of a barrage of competitive advertising, a great deal of which has been both unfair and unethical. If we are to survive and grow, we must get the truth before the public and in my humble opinion this can only be accomplished by united concerted action on the part of the gas industry—through national media, supplemented by properly related local media. The day is past when the individual gas company can work out its own independent salvation. Competition is using the bigger, better, prestige building national methods. Individual company efforts, uncoördinated, will prove just as ineffective as a load of buck shot would in stopping a charging elephant. A high powered, accurately directed bullet is needed.

It is true that much of the national advertising in the electric industry is developed and sponsored by a few large powerful manufacturers of equipment and appliances and that we in the gas business have no comparable "angles". It is true, in spite of the national administration's unwarranted and despicable attack on the electric industry, that the publicity and prestige resulting from the Government's electrification program has been worth millions of dollars in moulding public opinion favorable to electricity. This situation however, does not alter the necessity of proceeding,—it simply makes our task more imperative, more difficult—and challenges our abliity as a nationwide industry composed of many individual units to get together and accomplish our purpose.

Not too late

The gas industry has awakened to its dangers,—and to its opportunities. There is more sentiment now than ever before for action. We have already delayed too long—but it is not too late. The national appliance sales contests, under the direction of the American Gas Association, are particularly timely and are welding the sales efforts of our industry into a vast concerted, integrated program which is already reflecting itself in greatly increased sales of major domestic gas appliances. How appropriate that these nation-wide plans become effective just when business is "on the up" and pent-up consumer desire for modern household equipment is being gradually released, resulting in increased purchasing power. The "Mystery Chef" program, sponsored by a considerable group of eastern gas companies, including a large New England representation, is a splendid example of coöperative action. Public response is exceeding expectations and is demonstrating that coöperative methods pay.

Those who attended the last American Gas Association convention in Chicago will recall the spontaneity with which Mr. Pollard's presentation of this vital matter of meeting competition was acclaimed —*undoubtedly the high spot of the program,—and how a committee was appointed under the Chairmanship of Mr. Herman Russell, of Rochester, New York, to consider the question of national advertising. This committee which was representative of the gas industry in the various sections of the country, met promptly and after careful and searching consideration, unanimously endorsed and recommended a national advertising campaign on behalf of the gas industry. The committee report which was approved by the Executive Board of the American Gas Association, briefly and concisely states the program recommended, as follows:

"The Committee on National Advertising recommends to the Executive Board that a program of advertising for the Gas Industry, extending over a period of three years be undertaken under the auspices of the American Gas Association; that this Committee be empowered to develop such a program with the immediate objective of promoting public acceptance of gas as the modern, efficient fuel for all household, industrial and commercial purposes for which heat is required; and that it be further empowered to solicit the gas companies for the necessary financial support of such a program predicated upon the acceptance of not less than 70% of the gas meters served by these companies.

"For the information of the Board, it has been estimated that an adequate appropriation to accomplish the objectives stated herein would be not to exceed the sum of $500,000.00 annually to be apportioned among the subscribing companies on an annual basis of not more than four cents per meter served."

Salient Features of Program

You will note that the salient features of this program are: (1) Three years' duration (2) All-inclusive as to gas usage (3) Predicated on acceptance of 70% of the industry (4) Cost limited to 4c per meter per year. Nothing has been suggested as to specific types of copy nor the media to be used, it being the committee's thought to leave all details to a competent group to be selected at a later date by the contributing companies.

During the past three months the Committee on National Advertising has communicated with all gas companies of the country and has contacted many of them. At this writing, companies having in active service some eight and a half million meters of the necessary eleven million needed to launch the program have indicated their acceptance of the plan.

It is conceded that the final details as developed by a committee, representative of the participating companies, will probably not meet the 100% approval of any individual management, but that is not the point,—it undoubtedly will represent the thought and desire of a cross section of the gas industry and be a plan of which the industry should be proud. The most important step after the decision to proceed is made by at least 70% of the industry, will be the placing of our unreserved confidence in the representative group charged with carrying out the purposes of the program. The acceptance of this program by the large company or by the small company, by natural gas interests or by manufactured gas interests should

(Continued on page 64)

* Mr. Pollard's address, "The Urgent Need of Cooperative Advertising Campaign" was published in the November, 1935, issue of American Gas Journal.

Getting Our Share of the Business Increase*

By

Hall M. Henry

Asst. to V. P., The Utility Management Corp., N. Y.

EVERY gas company represented in this room can obtain in 1936 an Estimated Annual Revenue increase per Domestic customer of One—Two—Three—Four— or Five Dollars—*IF THEY WANT TO.* Furthermore, the expense per dollar of E. A. R. becomes less the more you get. What's more, to get a large increase you need only do three things, namely—

First—Resell your management on the gas industry.

Second—Set objectives high enough.

Third—Provide the needed sales Tools to secure these objectives.

The above conclusions are based on a study of some fifty gas companies and, also, of some hundred electric companies varying in size from 1,000 meters to 90,000 meters, located in various states east of the Mississippi River and, in case of the gas companies, with average Domestic rates of $1.00 to $2.25 per M.C.F. The study comprised the following partial list of factors:

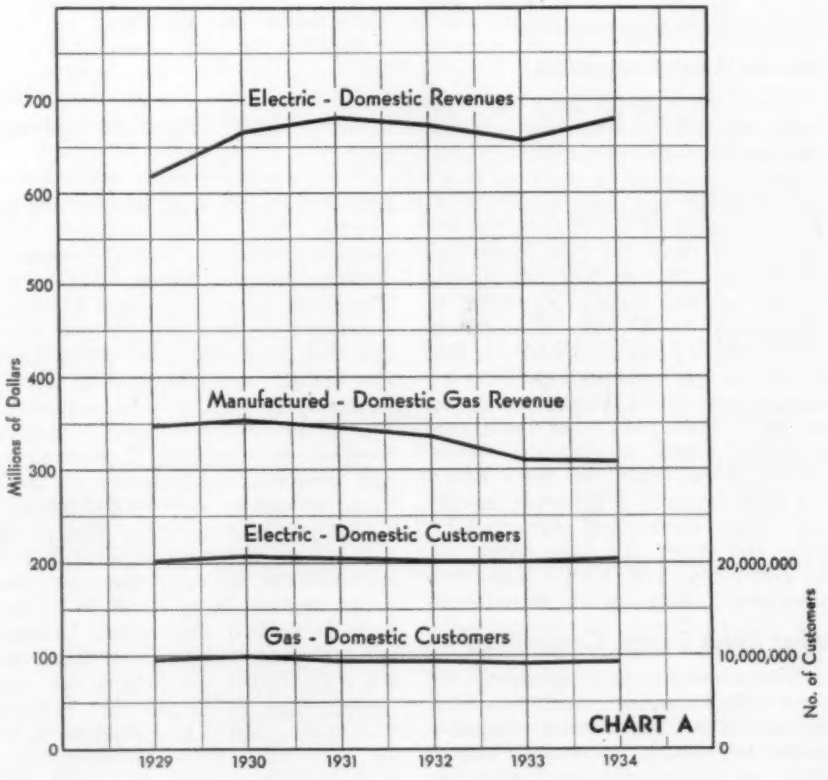
(a) General Sales policies (b) Amount of Personnel—Co. and Dealer. (c) Sales performance of salesmen and their training (d) Unit Sales volume of various appliances—Co. and Dealer (e) Saturation figures of various appliances (f) gas rates available and form of (g) competitive fuels and local unit prices (h) Quality of Company appliances sold—low—medium or high (i) Price range of competitive appliances sold (j) Advertising—kind—method and amount—Co. and Dealer (k) Dealer policies (1) Buying power index based on—(1) No. owned homes—(2) Income Tax returns—(3) No. automobiles—(4) No. telephones—(5) Rental value of homes, etc.

The conclusions are, also, based on the application of this three point plan to a number of gas companies during the past year and in observing their results. Now to observe the working of this plan:

Point 1. On Getting Our Share of the Business Increase is *Resell your management on the Gas Industry.* You may well ask "Does management need to be resold?" I, for one, believe it does. It has been subjected to tremendous favorable comment as to the glowing future of the Electric Industry, whereas gas has been painted as a *has been.* Furthermore, gas earnings have declined more than electric and management has been so busy with its many other problems it has not had the time nor the opportunity to learn what's ahead for the Gas Industry. It is our job as sales executives to recognize management's attitude and to help it reach a sane conclusion as to the Gas Industry's future.

What Can We Do to Resell Management?

First, let's compare the Domestic Sales revenue and Domestic customers of the Gas Industry with the electric. The curves in Chart A show that the Domestic revenue of both industries declined. True, the electric declined less and has recovered at a faster rate, yet the gas industry recovered Domestic customers in 1934, and this recovery has continued in 1935. This shows that customers return to gas as their economic status improves and is an indication that our losses were due to economic factors rather than to a permanent swing away from gas. But, management says "What about this



* *Presented at Tenth Annual Business Conference of New England Gas Association, Boston, Mass., February* 14, 1936.

loss in gas revenue during the past three or four years?" Again, we should point out it is no greater than one would expect in view of the highly competitive nature of our gas loads. There are several types of fuels that can be used for cooking, water heating, refrigeration and heating while the lighting, radio, vacuum cleaner, washing machine loads of the electric industry have no competitors in these fields. Even the mechanical electric refrigeration load had no real competition until the gas air-cooled refrigerator appeared. Hence, because the loads of the gas industries could be replaced by other fuels and what's more significant, because our customers thought these other types of fuels were more economical, much of our load went to competitive industries. The electric industry likewise suffered substantial losses in that portion of its load which came from the cooking, water heater field—for instance, surveys of electric range users in several properties disclosed the fact that 50% to 60% were not being fully used—people had returned to what they considered cheaper methods.

Gas Can Meet Competition

True, our managements can't get much satisfaction from the fact that the electric industry suffered greater losses in comparable types of loads, nor from the fact that the electric industry's sales of electric ranges fell off during 1933 and 1934. Yet, they do indicate that neither the electric or gas industry were in a position to adequately cope with competition during the depression. However, that is not the gas industry's position today—for now we know that based on MIT tests gas is the most economical means of heating water. Furthermore, based on tests which we have run, gas is generally speaking more economical for cooking (see test table 1) than coal, oil or electricity, and what's more important it has no equal in these fields.

What About Electric Competition:

Yes, management says, this is all very well, but can you make headway against the tremendous impetus given the electric industry? Fortunately, we have ample proof at hand. Company A sold gas refrigeration to 15% of its customers in 1935 even though the operating cost for gas refrigeration was $2.25/mo. and for electric $1.25 to $1.50/mo. This same company sold gas ranges to 22% of its customers even though it is cheaper to cook with electricity than gas for customers who own an electric refrigerator and 35% of the customers have, or had, electric refrigeration. This same company increased its average annual Domestic consumption per customer 3M cu. ft. The present average annual domestic consumption 25.2 M.C.F. and average revenue $39.20 while the average rate for all Domestic gas is $1.68/M. Company B. sold gas refrigeration to 7% of its customers against similar competition. Company C with average domestic consumption of 34.7 M. C. F. and revenue of $42.00 sold automatically gas water heaters to 15% of its customers against 7 mill current—the average gas rate for water heating being $1.00/M. Company D sold in November, December last year and January this year gas water heaters to 11% of its customers with $1.00 gas rate against 1c electric. Three gas companies to my knowledge show increase from 22% to 33% in 1935 over 1934 and all companies had stiff electric competition.

TABLE 1

COMPARISON OF COAL VS. GAS FOR DOMESTIC COOKING

CASE I: The following comparison of coal and gas was obtained by using coal one week and gas the next in the same home. The same number of meals were cooked and the same menus used each week. The family consisted of three adult persons—Father, Mother and Daughter —Father a blacksmith by trade.

Coal—654 lbs. @ 5c lb.=$3.27
Gas—860 cu. ft. @ 13c/100 = ... 1.12

Saving using gas.....$2.15/Mo.
(No water heated coal or gas).

CASE II: The following comparison was conducted on same basis as Case I—Family consisted of three adult persons—Father, Mother and Son—Father and Son in newspaper work.

Coal—742 lbs. @ 5c=$3.71/Mo.
Gas—2,580 cu. ft. @ 13c/100 = ... 3.35

Saving .....$ .35/Mo.
(Some water heated on coal and gas).

Other Reasons for Losses

Surely managements should be influenced by such facts in reaching a favorable conclusion regarding the future of the gas industry. Other factors among those mentioned which have caused losses are as follows:

Unavoidable Losses

(a) Those due to people doubling up.
(b) Those due to people moving out of territory.
(c) Rate reductions.
(d) More economical use of gas service.
(e) More efficient appliances.

Avoidable Losses

(a) Substitution of other fuel for gas without effecting any reduction in cost to the customer.
(b) Those due to relief agencies in supplying quantities of coal, or oil, for cooking and water heating and heating, because they too believed that these fuels were cheaper than gas.
(c) Substitution of prepared foods for home cooked and baked products.
(d) Customers not using their appliances because they do not fully appreciate their value.

What of the Unavoidable Losses?

Certainly there is nothing in the unavoidable list, above, for managements to become alarmed over, unless it is the substitution of efficient for inefficient appliances. However, while it is true, for instance, that gas water heaters are from 30% to 40% more efficient than old style heaters, yet due to the fact that there are not many old style heaters in use, this is now a favorable factor for gas since the more efficient heater means more economical gas service and, therefore, a broader market.

The Avoidable Losses

Now, as to the avoidable losses, we should hide our heads in shame. Had we known the facts at the beginning of the depression which were later developed as to costs of heating water and cooking and had we passed this information on to our customers, we should have had customers turning to gas to save money instead of turning from gas—that is what will happen in the next depression if we are on our job. While we are pointing this out to our management we should likewise ask them to see that A.G.A. is requested to make continuing tests (as to the comparative costs of gas and competitive services) as new appliances are developed for gas and the competitive industries. What is true today as regards costs may be changed

overnight by improved appliance design.

Hence, in reselling our management we can point out our economics are correct, that we ceased to lose and began to gain gas water heating and cooking loads once we had the facts and presented them to our customers—that the gas industry, as will be shown later, can make large gains if given the proper tools and support. That our quality of service is of the best as evidenced by our ability to make gains where gains would least be expected. That our one and only handicap is *Salesmanship*. These are but the barest outline of what might be done to resell the management—but resell them we must and as our first step in getting our share of the business increase let's start now to resell them.

Point 2. Set Objectives High Enough

The second step and probably the most important in our three point plan to get our share of the general business increase is to "Set Objectives High Enough." Why the emphasis on setting Objectives High Enough? Because, out of our study of the sales results and sales policies of some fifty gas companies and of some one hundred electric companies, *we noted differences in sales results which could not be attributed to differences in opportunities.* They could only be accounted for on the basis of a difference in the Sales Objective of each. True, there were differences in sales tools and sales policies which might account for the difference in results, yet there was no reason to believe these differences in sales tools and sales policies couldn't be changed. Hence, we decided to test this point (2) of our three point plan and set up a standard Sales Objective or what has come to be known as the "Yardstick Budget." The following were the yearly Sales Objectives or Yardstick Budget for the various appliances in % of Domestic Customers:

What were the results? Did the companies whose managements were sold on the gas industry and who set adequate sales objectives reach these objectives? Let's look at the Record. The following table shows the actual 1934 results—The Original 1935 Budgets (before our Yardstick Budget appeared)—The 1935 Yardstick Budget—The Revised 1935 Budget (after seeing the Yardstick Budget)—and the Actual 1935 results for four gas companies of about equal size having a combined total of 21,400 Domestic customers and located in different sections of the United States:

	Actual 1934 Results	Original 1935 Budget	Revised 1935 Budget	Yardstick 1935 Budget	Actual 1935 Results
Gas Ranges	1338	1369	1810	2140	2123
Gas Refrigerators	132	207	304	436	660
Auto. Gas Water Heaters	733	800	1331	1170	1295

X. Based on table of percentages given and number Domestic Cust.

What do these results show? Compare the 1935 Original Budget with the 1934 Actual—what do we see—*a typical budgeted increase* for 1935 over 1934. Now compare the 1935 Revised Budget with the 1934 Actual—a budgeted increase of approximately 50% in gas ranges—a 130% budgeted increase in gas refrigerators, an 81% budgeted increase in gas automatically controlled water heaters. Now look at the actual 1935 results as compared with the 1934 Actual—a 60% increase in gas range sales, a 400% increase in gas refrigerator sales and a 76% increase in gas automatically controlled water heater sales. Let's compare these with the Yardstick % increase over 1934:

Other Examples of High Objectives on Results

Do not these results show the value and importance of setting objectives high enough—were these *Special Cases?*—Only to the extent that these are straight manufactured Gas Companies so that we could expect and secure emphasis on all three of these major appliances—Let's take a combination property where emphasis was placed on Gas water heaters and Gas house heating—actual 1934 and 1935 results were for 5500 Domestic gas customers with an average rate for water heating of $1.00/M and for house heating 55c per M—competing with $10.00/ton coal and oil 6½ as follows:

(See Table on page 38)

	% Increase Yardstick Budget Over 1934	% Increase Actual Over 1934	% Increase Gas Industry Over 1934
Gas Ranges	60%	60%	30%
Refrigerators	230%	400%	56%
Automatically controlled Water Heaters	60%	76%	....

These two electric property results are shown because they too clearly indicate the value of setting a high objective. Look at Property A—most companies would gladly accept a 50% increase in range sales as a quota—yet they got an actual 155% increase. A 346% increase in water heater sales would gladden the hearts of any sales executive. Yet by budgeting greater increases a 1083% increase was obtained.

Do not these several examples of results secured on gas and electric properties where objectives were high illustrate the part that adequate objectives play in securing satisfactory results? I wish that each of you could have had the opportunity to look at the results of some 50 gas companies and some 100 electric companies previously mentioned and objectives were adequate the actual results were far in excess of these companies who aimed low.

Manufactured Gas:	
Ranges	10% of Domestic Cust.
Automatically Controlled Gas Water Heaters	5% of Domestic Cust.
Refrigerators	2% of Domestic Cust.
House Heating	½% of Domestic Cust.
Space Heater (Radiantfire and Circulator)	1% of Domestic Cust.
Natural Gas:	
(a) *Companies having made changeover since* 1930	
Ranges	10% of Domestic Cust.
Automatically Controlled Gas Water Heaters	5% of Domestic Cust.
Refrigerators	2% of Domestic Cust.
Space Heater (Radiantfire and Circulator)	3% of Domestic Cust.
House Heating	5% of Domestic Cust.
(b) *Companies on Natural Gas prior to* 1930	
Ranges	10% of Domestic Cust.
Automatically Controlled Gas Water Heaters	2% of Domestic Cust.
Refrigerators	2% of Domestic Cust.
Space Heater (Radiantfire and Circulator)	3% of Domestic Cust.
House Heating	1% of Domestic Cust.

	Actual 1934	Actual 1935	Budget 1935
(1) Automatically controlled Gas Water Heaters.....	311	563	550
% of Customers Sold	5.6%	10.2%	10%
(2) Gas House Heating	12	96	102
% of Customers Sold	.2%	1.74%	1.85%

Let's take another example, this time, for two electric groups of properties.

	Actual 1934 Results	Original 1935 Budget	Revised 1935 Budget	Yardstick 1935 Budget	Actual 1935 Results
Property A—					
Ranges	998	1500	2612	2612	2550
Electric Water Heaters..	112	500	1396	1396	1325
Property B—					
Ranges	703	691	1450	1450	1212
Electric Water Heaters..	175	150	800	800	717

Look at the % increases over 1934 Actual:

	% Increase Original Budget Over 1934 Actual	% Increase Revised Budget Over 1934 Actual	% Increase Actual 1935 Results Over 1934 Actual
Property A			
Electric Ranges	50%	161%	155%
Electric Water Heaters	346%	1165%	1083%
Property B			
Electric Ranges	None	100%	72%
Electric Water Heaters	None	360%	310%

Point 3. Provide the Needed Sales Tools: What Special Tools Were Used

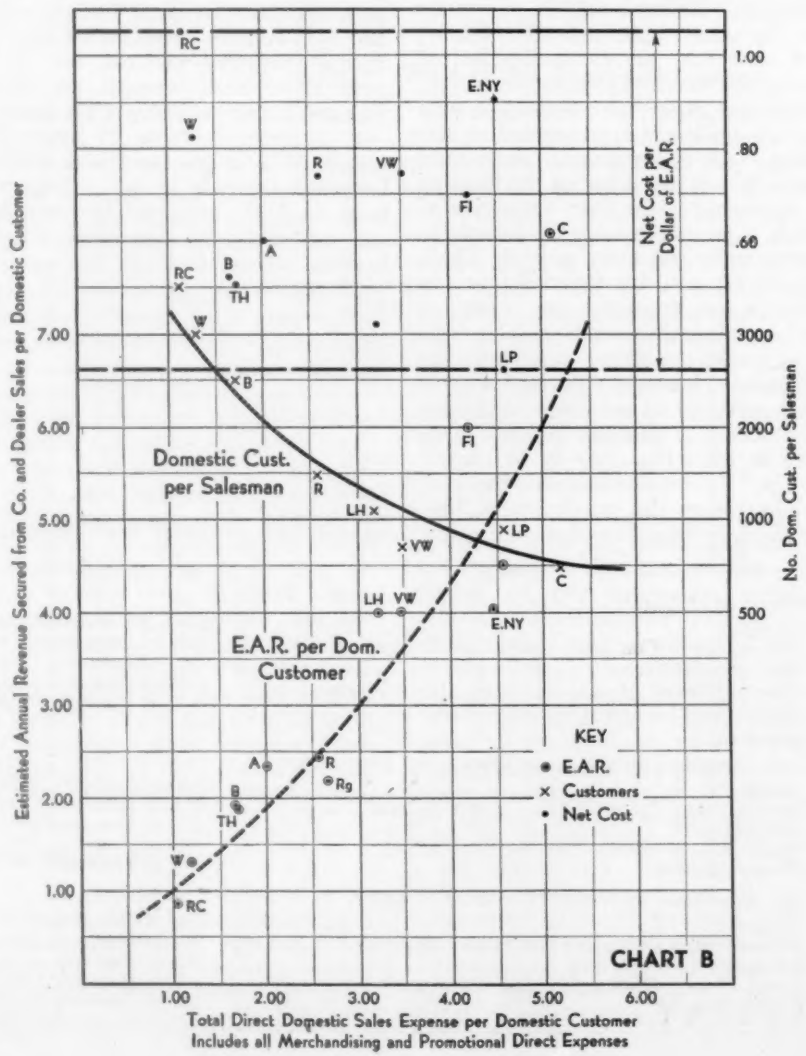
Surely—you say—special sales tools were used to get these larger results. If you mean special appliance prices here—special terms there —½ price gas for this company—free gas for that one—a change in form of rate here—yes, but these were the sparks that set in motion the forces to get the job done—just as a match kindles a fire, it is the wood that keeps the fire going and fixes its size. So do these special features serve to stimulate the action of the New Business Department; they are something to tie to—the romance of the business, if you please—But, it is the sales effort (Salesman power plus advertising) that gets the job done.

It is true some of these special tools will enter into nearly every enlarged sales program. The first step is to set the objective—then ask your New Business Department what sales tools they will need to reach the objective. Then weigh the needed tools carefully against the results—and if the results justify their adoption be *sure to provide* the needed tools. *In nearly every one of the companies analyzed, where a company failed to reach its objective—the cause could be attributed to a lack of needed sales tools.* Generally the deficiency was in "Salesmen" power and advertising and not a lack of any one of the previously mentioned special features. The companies that secured large increases in E.A.R. per customer were those that had adequate "Salesman" power and advertising. This point is clearly emphasized by the Chart B where number of domestic customers per salesman is shown to decrease as sales results/customer increased. The companies who produced the greatest E.A.R. (Estimated Annual Revenue) per customer did so by having fewer customers per salesman or in other words, more sales effort per customer. Hence probably one of the most important sales tools that is not a function of the local property characteristics—and common to all companies—is to provide adequate *"Salesman" power.*

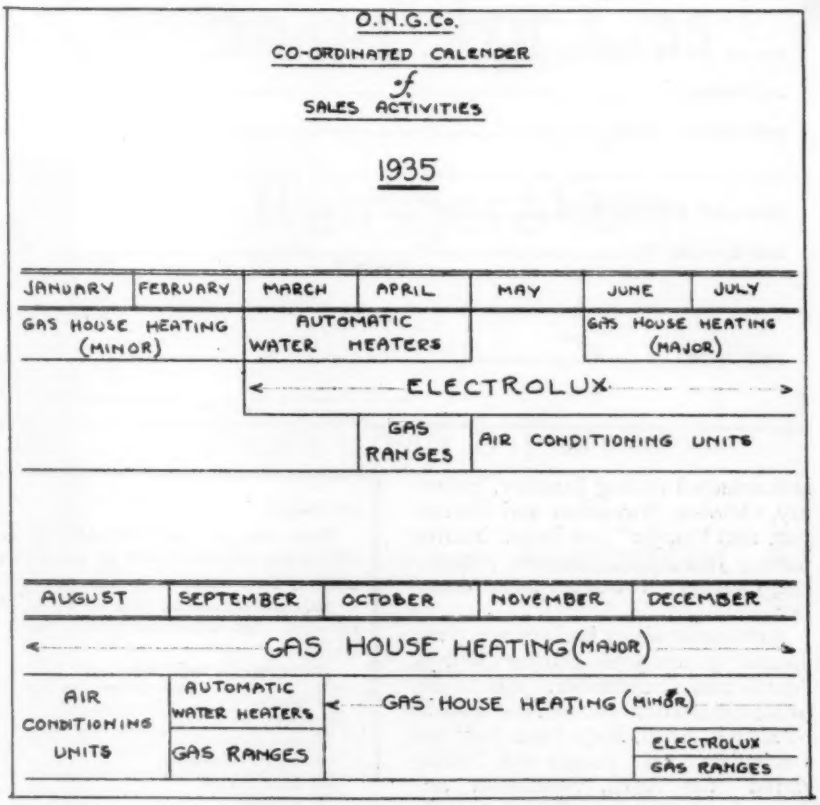
What of the Cost?

You may well say—"That's all right, but—doesn't it cost more to get more?" Yes, if you are speaking of total dollars. But if you mean it costs more *per $ of E.A.R.*—the more you get—the answer is "No". For instance, if you now spend $1.00 to get a dollar of E.A.R. per customer, and you want to get $3.00 of E.A.R. per customer, your New Business expense need not go to $3.00. True it can cost you more per dollar the more you get, yet our experience has been that it costs you less. Look at Curve B. It shows

(Continued on page 56)


Estimated Annual Revenue Secured from Co. and Dealer Sales per Domestic Customer
Net Cost per Dollar of E.A.R.
No. Dom. Cust. per Salesman
Domestic Cust. per Salesman
E.A.R. per Dom. Customer
KEY
E.A.R.
Customers
Net Cost
CHART B
Total Direct Domestic Sales Expense per Domestic Customer
Includes all Merchandising and Promotional Direct Expenses

Seasonal Promotion Plan Increases Sales



By Thomas E. Bartlett
Sales Manager, Oklahoma Natural Gas Company

A SEASONAL sales program for gas appliances suited to a coordinated plan of dealer cooperation necessary in the state in which the Oklahoma Natural Gas company operates, is now entering its third year of use by our company with but few material changes.

Its success during the second year of its operation, 1935, is attested by increases in our territory of conversion burners amounting to 168 per cent of the quota set; central gas heating plants equal to 225 per cent of the quota, floor furnaces, 134 per cent, gas ranges, 94 per cent (a total of 11,238 gas ranges were sold in our territory which includes 60 towns and 10 counties), and automatic water heaters, 107 per cent of our quota.

The quota for 1935 was set in each case at 20 per cent more than the sales of the year before. That for 1936 has been set at 15 per cent above the sales of 1935.

The promotion program is, as intimated above, an indirect cooperative one for the dealers alone. A law passed by the 1931 legislature in Oklahoma forbids the sale of appliances by utilities within the state. Consequently, any sales we push must be made, in the end, by the dealers.

Shortly after this law was passed, the Oklahoma Natural Gas company organized its Dealer Association, through which we are able to assist appliance sales and ascertain results. At least 200 dealers—every major retailer of gas appliances in our territory—are now enrolled.

Members of the association report to us, on a postal card provided for the purpose, the number of specific appliance sales made each month. The names of their stores are not given on the cards, so that the information can be treated as entirely confidential.

From these cards we compile monthly reports for the use of the dealers and our district managers. The reports assist materially in directing our sales efforts either by districts or by article, according to the indicated need.

Promotional Channels

The seasonal sales program makes use of the usual channels of promotion, altered or augmented to suit the conditions described above. These may be briefly outlined as follows:

1. An employee tip system, in which the company employees notify the district sales manager through a pink sales slip of any likely prospects with whom they have talked or whom they may have met casually. These tips are passed on to the dealer covering the territory from which the information is received.

2. The work of district managers and others of his personnel assigned to the purpose, in promoting "big jobs," on the ground, where a new house or a new building is under construction. The actual sales are consummated by the dealers.

3. The Home Service Department tie-in with the dealer. Women of this department of the company follow up dealer sales, for instructional aid to the buyer, or to take care of complaints.

4. Newspaper and periodical advertising in which sales are referred to dealers.

5. Displays, fair and exposition booths, etc., supported by the company and to which our company lends its show windows and floor space, but in which dealers are credited.

The seasonal sales program of the company includes first, a "Coordinated Calendar of Sales Activities," showing promotions to be stressed according to months, and, second, a complete plan of procedure in the promotion of each of the major appliances. Printed copies of the program are placed in the hands of all district managers and district sales managers, and adhered to strictly by them.

According to the calendar, "minor" gas house heating promotion

DATE_____

NAME OF PROSPECT_____

ADDRESS_____

PROSPECT FOR_____

_____

DEALER PREFERRED_____

REFERRED TO_____
SALESMAN DATE

_____
DEALER DATE

RESULTS_____

_____
EMPLOYEE

A pink "tip slip" is furnished all employes of the Oklahoma Natural Gas company for the names of likely gas appliance prospects contacted. These slips are turned over by district sales managers to dealers, who in turn make the sales.

is conducted during January, February, October, November and December, and "major" gas house heating during June, July, August, September, October, November and December.

Automatic water heaters are given special promotions during March, April and September. Electrolux promotions come during the months of March, April, May, June, July and December. Gas ranges are "calendared" for April, September and December. Air conditioning units are stressed during May, June, July and August.

How Plan Works

Let us take "gas house heating" as an illustration for the procedure outlined in the sales program:

1. The purpose of the "major" campaign is set forth as the promotion of the Conversion Burner (which is loaned by the company and installed at the cost of the customer by a local plumber), the Central Gas Furnaces and Boilers. The purpose of the minor gas house heating program is to promote Radiant Fires, Circulating Heaters and Floor Furnaces.

A letter is written to all prospects in the district calling attention to the savings to be effected, and inviting them to call at the district office for further discussion of the appliance. The prospect is sold on the idea and, in the case of the Conversion Burner, the plumber notified and the deal consummated; or in the case of other articles, the proper dealer notified.

2. Quotas for the sale of each of the articles promoted are set for the calendar year.

3. The advertising and display policy is outlined: weekly newspaper ads during the campaign, for larger cities, and monthly ads for other towns of the state. Displays are to reflect the articles calendared.

4. Employee cooperation is outlined: meetings are held once a month in each district and continued monthly until the close of the campaign year. A dinner or party is given at the close of the year to the district making the greatest percentage of quota and an employee in each district is given a pen and pencil set for the greatest number of prospects turned in who actually install one of the articles for which the promotion is held.

5. Dealer cooperation, it is explained in the program, is to be emphasized during campaign period, even to the extent of encouraging retailers to push their own burners, though they are not to sell those used by the company. Engineering and sales services are to be made available to all heating dealers and plumbers.

6. and 7. Installation procedures and inspection requirements are set forth. Instructions to be given both plumbers and users of installed products are included.

The plan of procedure in all other calendared campaigns is similarly outlined, to provide all the information district officials may need in the conduct of various campaigns.

Mr. Dealer:

Please place after each GAS APPLIANCE listed below, the number sold by you during month of.....

Then mail the card on or before the 5th of the month. The value of our report to you depends upon the accuracy of your report to us.

OKLAHOMA NATURAL GAS CO.

MAJOR HEATING	Gas Furnaces	
	Gas Boilers	
	Conversion Burners	
	Unit Heaters (commercial)	
AUXILIARY HEATING	Open Space Heaters	
	Floor Furnaces	
	Circulating Heaters	
	Gas Radiators	
COOKING	Hot Plates or Laundry Plates	
	Gas Ranges	
WATER HEATING	Auto. Water Heaters (domestic)	
	Auto. Water Heaters (commercial)	
	Manual Water Heaters	
WASHING & IRONING	Gas Irons (small)	
	Gas Ironers (mangle)	
	Gas Heated Washing Machines	
Gas Incinerators		
Electrolux Refrigerators		

Dealer cards are supplied all retailers of gas appliances in the territory covered by the Oklahoma Natural Gas company system. These cards indicate the number of sales made in all appliances, are strictly confidential (they do not have the dealer's name upon them), and are used to compile reports of sales each month.

Instructional meetings for employes are held in each district of the Oklahoma Natural Gas company system each month, when the sales program is outlined. Here is one phase of the work being done at such a meeting; explaining the range. The salesmen and two members of the home service department are doing the "explaining."

"Leadership Campaign" For Gas Refrigeration

More Than a Thousand Prizes to be Awarded in 1936 Contest

B. H. Gardner, chairman of the 1936 A. G. A. Refrigeration Committee, inspects the "sword of merit" to be bestowed as an emblem of leadership in the 1936 "Leadership Campaign"

FOR the fourth consecutive year, the American Gas Association Refrigeration Committee will sponsor a nation-wide campaign for the selling of gas-operated household refrigerators which will last throughout April, May and June, 1936, according to an announcement of the Committee. This year's drive will be known as the "Leadership Campaign" with the gold hilted "Sword of Merit" as its symbol. This follows precedents, the 1935 campaign having been known as the "Prosperity Cup" campaign, and the 1934 drive popularly known as the "Blue Vase" campaign, in which trophies were offered. The 1934 campaign was preceded by the "Ice Cube" contest in the summer and fall of 1933.

Because of the phenomenal growth in the public acceptance of gas refrigeration, a very large part of which is due to the promotion of sales of gas-operated refrigerators by many hundreds of gas utilities, along with the fact that the refrigeration industry as a whole regards 1936 even more of a refrigeration year than 1935, the Committee has planned this year's campaign on a scale vastly more comprehensive than in previous years. Awards that will go to individual companies are larger than ever before, and the cash awards that will be distributed to the thousands of individual salesmen who will compete in the three-month drive will be about double those of last year in the "Prosperity Cup" contest.

As in previous years, a symbol of successful salesmanship will loom large as a goal for those companies who come out ahead at the conclusion of the campaign. This year's symbol is the "Sword of Merit."

Eight swords are offered as trophies by the Committee to the eight companies who make the highest records in their respective divisions, during the "Leadership Campaign."

The American Gas Association Refrigeration Committee chose a sword not as an implement of warfare, but as a badge of leadership. Although it was once an implement of battle, today the sword is solely the "badge of honor and the mark of rank," the Committee states. For A.G.A. Refrigeration Committee contest winners the sword will be the mark of a leader.

The trophies will be modeled after genuine presentation dress swords. They are made of specially treated, highly tempered steel, elaborately engraved; the design being carried out in the gold panels of the scabbard. Heavy gold braid and tassel will be attached to the handsome gold hilt. The sword will be encased in a mahogany box to which will be attached a gold presentation plate with the name of the winning company engraved upon it.

In planning the 1936 gas refrigeration campaign, the A.G.A. Refrigeration Committee has taken into consideration the enthusiasm of executives of a large portion of the American gas companies in building up the gas load through the sale of automatic refrigerators as gas appliances. As evidence of the interest in the leaders of the industry in these

gas refrigeration campaigns, the Committee emphasizes the way in which the industry increased its participation from year to year in the campaigns sponsored by the American Gas Association.

In the 1933 campaign, under the chairmanship of Cyrus Barnes, of Boston, 3,000,000 meters were registered. In the 1934 contest, known as the "Go-Getter" or "Blue Vase" contest, under the leadership of Ronald A. Maloney, then of Philadelphia, the number of meters was more than doubled to 7,000,000 meters. Last year, 2,000,000 more meters were added under the chairmanship of John J. Quinn of Boston. In last year's campaign, with a registration of 9,000,000 meters, hundreds of gas companies who had not participated in previous campaigns enlisted in the battle, and retail salesmen of gas companies received national cash awards for the first time.

A total of at least 10,000,000 meters is the registration objective of the 1936 contest—the "Leadership Campaign" under the chairmanship of B. H. Gardner, who has said: "The honor of leadership, as well as a total of more than 1,000 awards, including $24,320 in cash, should induce all companies to make this our greatest refrigeration campaign."

Awards to companies and to individual salesmen in the 1936 campaign are virtually double those offered last year in the "Prosperity Cup" campaign. More than one thousand cash awards are offered.

All of the cash awards to company winners have been raised considerably as will be seen by comparing the terms of this year's contest with those of last year.

Following the policy of last year's campaign special attention has been given to rewarding the thousands of retail gas appliance salesmen on whose efforts the success of these campaigns depend. Consequently, $12,320 will be distributed to the selling forces of gas companies in the "Sword of Merit" campaign.

A total of $7,200, comprising 720 awards, will go to high retail salesmen during each of the months of the campaign's duration.

Awards totalling $5,120 will go to retail salesmen making the highest records during the entire campaign.

Gold "medals of merit" will be presented to all salesmen who make the "best showing during the campaign."

In addition to the eight "swords of leadership" to be granted to the eight companies standing highest in sales achievement during the entire campaign, sixty cash awards amounting to $12,000 have been provided for the gas companies that are ahead in the contest.

The Committee recommends that companies winning cash prizes arrange to distribute the money among sales managers, supervisors and others who have aided in making the campaign successful.

Cash awards going to companies include liberal cash awards for "honorable mention" in most divisions.

In each case where a company receives the "Sword of Merit," such company also receives a large cash award.

Additional cash awards have also been provided for the companies in the first, second and third divisions that make the most installations per 10,000 meters.

In this year's campaign the competing companies will be divided into eight groups instead of seven. Two divisions will be composed of companies competing among themselves on the basis of percentage of increased installations during the 1935 campaign. The first division will consist of seven metropolitan gas companies; the second division will be made up of six companies that made outstanding showings in Division B. of the 1935 campaign.

Six divisions will be made up of all remaining companies grouped according to the total number of domestic meters on their lines. These six divisions will compete on the basis of total installations during the present campaign.

The third division will comprise companies having over 40,000 meters; fourth division, 20,001 to 40,000; fifth division, 10,001 to 20,000; sixth division, 5,001 to 10,000; seventh division, 1,001 to 5,000, and eighth division, 1,000 meters or under.

The first division in the "Leadership Campaign" includes the Boston Consolidated Gas Company; Kings Appliance Corporation, Brooklyn, N. Y.; Brooklyn Union Gas Company; Consolidated Gas Company of New York; Philadelphia Gas Works Company; Washington (D. C.) Gas Light Company, and the Southern California Gas Company of Los Angeles. Grand awards for this division are: first, "Sword of Merit," plus $600; second, $500; third, $300; fourth and fifth, $200 each.

A special award of $600 is open to a company in the first division that makes the greatest number of installations per 10,000 meters throughout the entire campaign. The winner of this special award automatically surrenders its position in the grand awards class to the next highest company, unless that position chances to be first place. That is, if a company gains the special award and the third award, it surrenders the third award to the company that earns the fourth award, advancing the position of all other companies.

The "Sword of Merit" plus $1,000 can be obtained as an award by any company in the first division that holds both the first position for attaining the greatest percentage of increases in installations, and the greatest number of installations per 10,000 meters.

The second division comprises the Providence (R. I.) Gas Company; Ohio Fuel Gas Company, Columbus; Minneapolis (Minn.) Gas Light Company; New Haven (Conn.) Gas Light Company; Portland (Ore.) Gas and Coke Company, and Brooklyn Borough Gas Company. These companies will compete on the percentage of increase in installations in last year's campaign.

Four grand awards will go to the foregoing companies, as follows: first award, "Sword of Merit" and $500; second, $400; third, $300; fourth, $200.

A special award of $500 is offered to a second division company under the same conditions prevailing in the first division, already described.

As in the first division, the "Sword of Merit" plus $800 can be earned by a company in the second division that attains first place in percentage of increase in all installations and also first place in the 10,000 meters class.

In the third division, eight grand awards are open: first, "Sword of Merit" plus $400; second, $300; third, $200; and $100 each for the fourth, fifth, sixth, seventh and eighth places.

The special award for the third division is $400.

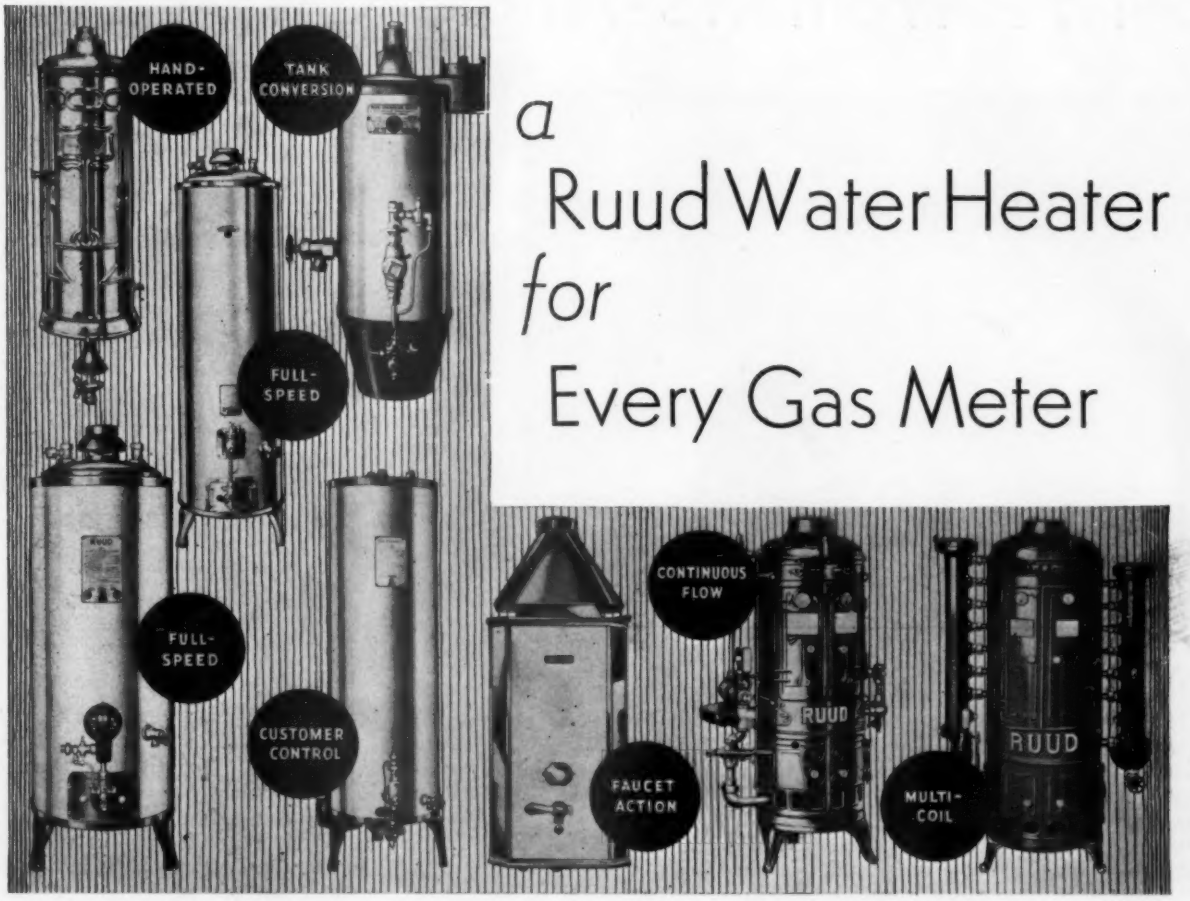
The "Sword of Merit" plus $700 is obtainable in this division under conditions already described.

Grand awards for each of the fourth, fifth and sixth divisions are: first award, "Sword of Merit" and $400; second award, $300; third award, $200, and $100 each for the five remaining companies.

For the seventh and eighth divisions, eight grand awards are also provided, the first award being the "Sword of Merit" and $300; second, $200; third, $100, and $50 each going to the remaining five company winners.

In all cases, the grand awards in each division beyond the third award

(Continued on page 66)



a Ruud Water Heater *for* Every Gas Meter

Check with RUUD for your 1936 Gas Water Heaters . . . . . hand-fired and automatic . . . . . full-speed and low-speed . . . . . storage and faucet-action.

RUUD is the All-Markets Line, blanketing every prospect from one faucet to a thousand. Made for all gas and water conditions. AND LOW IN PRICE!

Complete LIQUID SUNSHINE advertising and sales helps!

Enter the National Gas Water Heater Sales Contest!

COMPLETE LOOSE-LEAF CATALOG SENT TO ALL SALES EXECUTIVES ON REQUEST.

RUUD MANUFACTURING COMPANY
Pittsburgh, Pa.

RUUD

Get A Woman's Angle On A New Gas Range

For Window Display Copy

By Stuart Bratesman

Manager, Display Dept.

Boston Consolidated Gas Co.

A DIFFERENT sales approach! Something a little apart from the ordinary! That's the hue and cry today. Competition is getting stronger, competitors are spending real money to run down our products and appliances, with the resultant loss of new business to those gas companies who insist on sitting back and waiting for prosperity to show up around that well known corner. Every sales help must be brought into play to not only hold on to old business, but to create new channels of revenue.

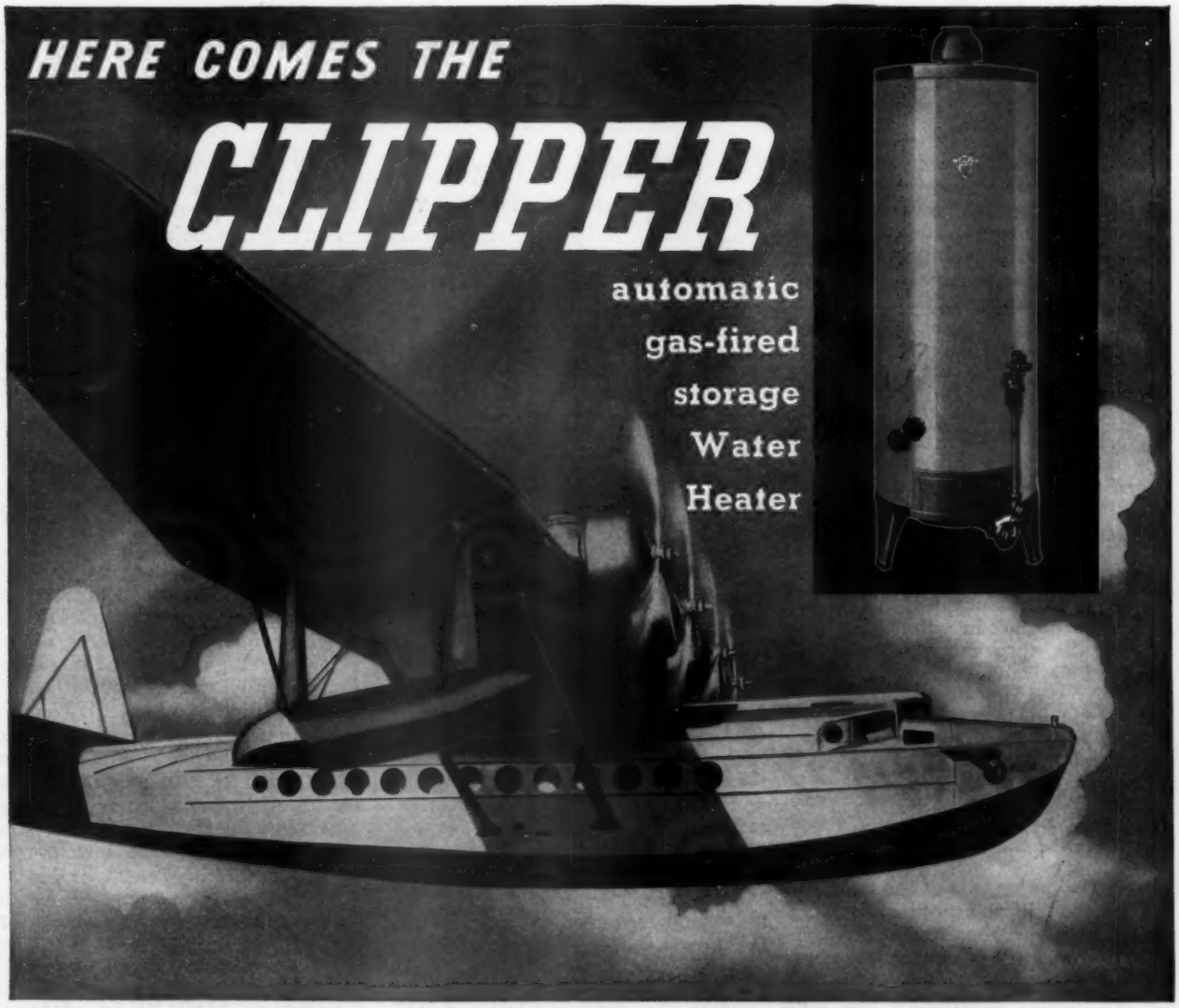
A forceful, intelligent program of modern window display will go a long way towards keeping your sales figures on an even keel, and even promote new sales.

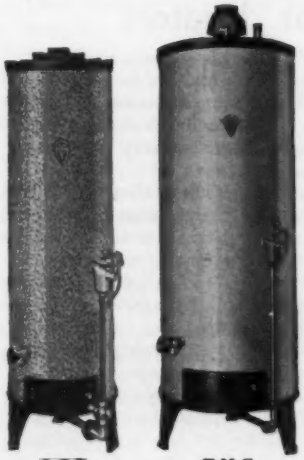
Through your daily program, you can reach thousands of consumers and passers-by with logical sales ideas and arguments. One very effective angle is the woman's side of the gas cooking story. Use it! It's a grand opening wedge on new gas range sales.

Most people, today, are convinced that the woman of the house does most of the buying, especially in purchases having to do with the kitchen and the preparation of meals. Another fact, recognized by every member of the gas industry, is the marked superiority of gas over other cooking fuels and methods. Combine these two important items in a window display! You have a "natural" gas range sales story.

The trouble with a lot of people in our industry today is that they feel that, because gas was once the accepted universal cooking fuel, it will always continue to be accepted as such. This is not true, especially during these trying times. Public opinion has been slowly changed by expensive advertising campaigns on the part of huge electrical manufacturers. There's no denying this fact. We must counteract this erroneous impression, and in most cases the ballyhoo has been misleading, with intelligent and *constant* sales and educational messages. What better, and incidentally inexpensive, medium have we at our disposal than our own window spaces?

Try out a few of these woman's angle cooking displays in your own stores. Make them actually sparkle, with crisp art work, conversational copy and hidden lights. They'll bring in sales, help build your cooking load and, above all, educate your consumers that they have the greatest cooking fuel obtainable, right at their range burner.





AGP REGULAR *Multiple Flue type*

THE DICTATOR *Single Flue type*

. . . supply you with a complete line of automatic gas-fired water heaters for every home and purse. Sure fire winners for your "Clean-up" Prize Contest. Write today for literature and new campaign designed to help you sell.

. . . NEWEST MEMBER OF THE LINE OF

AGP gas-fired WATER HEATERS

Here comes the Clipper! Eyes turn skyward to see the mighty flying boats that conquered the wide Pacific. Thousands thrill to that name today . . . as their great-grandparents did when the white hulled Clippers first blazed the trail to the East.

Now that famous name takes on new meaning. We chose it carefully. For the qualities that give it glamour are present too in this newest AGP automatic water heater: . . . constant, never failing service . . . rugged dependability . . . speed . . . and action . . . beauty . . . and popular appeal.

The AGP Clipper rounds out the line, fills the demand for an outside flue type gas-fired water heater. It has all the features people want, at the price they want to pay. It comes in five sizes from 15 to 40 gallons. The tank is copper bearing steel, galvanized. It is completely insulated under the gleaming baked enamel steel jacket. And, of course, it is completely automatic, with its dependability assured by the same honest workmanship that characterizes all AGP products.

The AGP Clipper will blaze new profit trails for you. Give it the opportunity. Complete details, specifications and prices are ready now. Write for them today.

AMERICAN GAS PRODUCTS CORPORATION
DIVISION OF AMERICAN RADIATOR COMPANY
40 WEST 40TH STREET · NEW YORK, N.Y.

How to Eliminate Tar and Gum Forming Compounds

By Theodore Nagel

President, Carburetted Gas, Inc., New York

THE high yield of condensate and the low thermal conversion of oil to hydrocarbon gas enrichment containing gum forming compounds are objectionable features inherent in the water-gas cycle currently employed in the production of carburetted water-gas and are responsible for costly operations—nuisances which can be eliminated.

The carburetor and superheater chambers supply energy for converting gas-oil to fixed gas enrichment in the conventional operations; and when heavy-oil displaces gas-oil, the additional energy required by this refractory oil is obtained from the fuel bed of the generator.

The operations for converting oil to fixed gas enrichment in the water-gas cycle that produce the objectionable results, apparently are:

I. Relatively long time that the oil is subjected to heating.
II. Relatively slow-rate of heat transfer to the oil.
III. The wide carbureting temperature range throughout the "gas make."

These operating features, inherent in the water-gas cycle, are responsible for the major part of the troubles encountered in the production and distribution of carburetted water-gas, i.e.: the operating expense involved in converting the enrichment oil to tar and lighter condensate and the expense caused by resins and gum forming compounds.

The undesirable characteristics of the oil-gas enrichment produced by the current method of operating are:

A. Unstable unsaturated hydrocarbons, naphthenes, aromatics; heavy hydrocarbons.
B. Low olefin content of the gas.

The resins and gum forming compounds are chiefly the result of polymerizing reactions and/or oxidation of the unstable unsaturated hydrocarbons.

The low conversion of the oil to oil-gas enrichment is caused by polymerizing reactions forming tar and light oil, constituents of which are naphthenes and aromatics; and the low yield of olefin gas is chiefly due to relatively slow heating.

The hydrogen content of the enriching oil is the limiting factor of its value to produce hydrocarbon fixed gases. A comparison of the thermal values of the paraffin and olefin lighter weight gases of equal hydrogen content reveals one of the causes for the low thermal value conversion of oil to enrichment gas high in paraffins.

Net B.T.U. per Cubic Foot Gas

CH_4	914	C_2H_6	1631
C_2H_4	1530	C_3H_6	2183

It is commercially practical to use heavy-oil and convert substantially all the hydrocarbon content of the oil to gas of less than four carbon atoms, the major portion being olefins mostly of two carbon atoms, and prevent the formation of the heavier complex hydrocarbons.

The Carbgas Flash System, a patented process for enriching water-gas, does this. Under it heavy-oil is converted to dry gas by primary pyrolytic action at uniformly even temperature and the secondary polymerizing reactions which produce tar, drip oil, naphthenes, aromatics and the hydrocarbon polymers, chiefly responsible for the resins and gum forming compounds, do not take place.

This system subjects heavy-oil to uniformly even cracking temperature that breaks down its refractory qualities so that all the oil is converted to gas of less than four carbon atoms, the major portion being olefins mostly of two carbon atoms. A typical enrichment gas of this character produced from 12% hydrogen oil, 7.8 pounds per gallon analyses:

CO	7%
H_2	8%
CH_4	19%
C_2H_6	4%
C_2H_4	49%
C_3H_6	13%
	100%

1340 B.T.U. per cu. ft.

The carbon monoxide in the gas is produced from oil carbon and steam in the water-gas which liberates an equal volume of hydrogen. The hydrogen content of the gas is 1.9 cu. ft. per cu. ft. gas produced by the oil. Consequently the hydrogen content of one gallon heavy-oil (177 cu. ft. H_2) can produce 93 cu. ft. gas of the above characteristics—a gas yield of 122,500 B.T.U. per gallon oil. Conversion of this type heavy-oil by the conventional carbureting operations approximates 90,000 B.T.U. of gas per gallon oil.

The Carbgas Flash System can be applied to existing carburetted water-gas apparatus.

New Canadian Law Affects Approved Gas Marking of Water Heaters

By a recent ruling of Mr. E. O. Way, Director of Weights and Measures, Department of Trade and Commerce, Dominion of Canada, pursuant to "An Act to Amend the Weights and Measures Act," Chapter 212 of the Revised Statutes of Canada, 1927, all storage water heating equipment sold or advertised in the Dominion of Canada must now bear indication of the actual storage vessel capacity in Imperial gallons accurate to the nearest gallon. Inasmuch as many American manufacturers have been selling equipment in Canada rated, as regards storage capacity, in the smaller U. S. gallons, and inasmuch as the American and Canadian Gas Associations have long ruled that capacity markings need only be accurate within 7½ per cent, the new Canadian law will affect the traditional name plate marking practises of numerous water heater producers and jobbers.

A letter advising water heater manufacturers of the new Canadian ruling, together with copies of documents setting forth the amendment and Mr. Way's ruling, was sent out from the American Gas Association Testing Laboratories in Cleveland, Ohio, as of January 31.

The Act itself reads as follows:

"The said Act is amended by inserting the following section immediately after section seventy-four thereof:—

'74A. No person shall sell or offer for sale any vessel, utensil or container which is represented as of a definite size or capacity in terms of measure unless such size or capacity is in terms of Dominion measure ascertained by this Act or some aliquot multiple or sub-multiple thereof, and any person who contravenes this provision shall be guilty of an offense and liable to a penalty not exceeding twenty-five dollars for a first offense and not exceeding fifty dollars for a second or subsequent offense.'"

The net effect of these developments upon water heater manufacturers will not be great. In most cases it will only be necessary for the producer to add a marking of actual vessel capacity in Imperial gallons to his name plate. In certain cases it may mean testing tank capacities at the factory in order to supply the proper data.

News of the Gas Industry

The New England Meeting

Competition, publicity, selling and the effect of governmental activities on our industry were the principal subjects discussed at the Tenth Annual Business Conference of The New England Gas Association, held at the Hotel Statler in Boston on February 13 and 14.

No one who attends one of these New England Conferences comes away disappointed. The subjects for presentation are selected with care and give a true and well rounded picture of the problems of the industry in that section of the country; and the papers themselves in many cases would do credit to a national convention.

The number of older men at these conferences is quite noticeable. Presidents, vice presidents, general managers and other high executives are there from all over New England, as well as the younger men. When the heads of companies consider it profitable to leave their regular duties and sit through every session of a convention, the association sponsoring that convention must be performing a real service.

Under these circumstances it is not surprising that the large meeting room was filled at every session, and that the attendance has been steadily increasing during recent years.

A feature of these meetings is the presentation of awards for the best sales records and for the best papers read before each division during the year.

Following this Major Forward, Managing Director of the American Gas Association, give a picture of the problems that confront us and the steps that are being taken to meet them.

President Knowlton devoted much of his very able address to a discussion of national problems. "Competent observers tell us," he said, "that the world at large is confronted with radical changes in the existing order, for which changed economic conditions are said to be largely responsible. In common with the other nations, our country is feverishly seeking for better ways of doing things in the common interest.

"In our case there is probably no direction in which this unrest manifests itself that transcends in importance the question of the relation of government to private enterprise. . . . During the last decade . . . government has stepped in to the extent that it partially but nevertheless substantially supplants private enterprise. . . . We can no more hope to succeed under an economic order that is half socialistic and half private enterprise than we can exist half free and half slave. Private enterprise cannot function under public management and cannot endure in competition with government. . . . Which shall it be—private enterprise or socialization?" If private enterprise should be our choice then "the utmost latitude must . . . be accorded to management. This means that the minimum of government supervision is essential. . . . In short private enterprise must impose its own discipline. If it fails to do so in effective degree, the deficiency will be made up by the government."

Later on President Knowlton said: "A pressing need of the hours is greater public desire for our service. . . . Gas service must have popular appeal quite as much as inherent merit. The idea is not new, as evidenced by sporadic efforts which have been made to develop it. However, these efforts have been directed too frequently by minds which are inexpert in this field—minds that are accustomed from training and experience to address themselves to facts. Such minds not infrequently lack judgment when they deal with human psychology. We should recognize this, seek out expert talent and let it function unrestricted in our behalf," That is why the "Mystery Chef" has been so successful, and one reason why the proposed National Gas Advertising Campaign is needed.

This question of National Gas Advertising was discussed by Mr. H. R. Sterrett, President of the New Haven Gas Light Company. His paper is reprinted in full elsewhere in this issue.

The following were elected officers for the ensuing year:

President, F. L. Ball, Boston, Mass.; Vice President, R. L. Fletcher, Providence, R. I.; 2nd Vice President, G. S. Hawley, Bridgeport, Conn.; Clark Belden, Executive Secretary.

The papers presented were as follows:

The Present and Future of the Gas Industry, Alexander Forward, Managing Director, American Gas Association.

The Association's Year, Clark Belden, Executive Secretary.

President's Address, R. H. Knowlton, President.

A Sales Philosophy, Walter C. Beckjord, Vice-President and General Manager, Columbia Gas and Electric Corporation.

The Place of New England in the Business Recovery Picture, Winthrop L. Carter, President, New England Council.

Househeating Sales Methods, Cecil C. Ogren, Househeating Engineer, Malden & Melrose Gas Light Company.

Commercial and Industrial Possibilities, Stuart F. Morgan, Supervisor of Gas Utilization, New Bedford Gas and Edison Light Coompany.

Operating High Spots, C. P. Warner, General Superintendent, Manchester Gas Company.

Social Security Legislation, C. J. Walker, Assistant Treasurer, New England Power Engineering & Service Corporation.

Plumber-Utility Cooperation, I. B. Skau, Hartford Plumber-Dealer.

Market Analysis for Gas Companies, William Webster, Vice-President, Narragansett Electric Company.

Long-Term Appliance Financing, H. L. Dalbeck, General Auditor, New England Gas & Electric Association.

A.G.A. Range, Water Heater and Refrigerator Promotion, R. J. Rutherford, Assistant to Vice-President, New England Gas & Electric Association.

The Value of Kitchen Heating to the Gas Industry, R. M. Keeney, Industrial Engineer, The Connecticut Light & Power Company.

Manufacturers' View—1936, R. B. Wright, Chairman, Manufacturers Division.

Getting Our Share of the Business Increase, Hall M. Henry, Assistant to Vice-President, The Utility Management Corporation. (Printed elsewhere in this issue).

Management Reviews Home Service Possibilities, John J. Quinn, Assistant to Vice-President in charge of sales, Boston Consolidated Gas Company.

Sales and the Modern Gas Service Department, David W. Price, Gas Engineer, The Connecticut Light & Power Company.

Why National Gas Advertising? H. R. Sterrett, President, New Haven Gas Light Company. (Printed in this issue.)

The Utility Situation from the Investors' Standpoint, Hugh S. Magill, President, American Federation of Investors, Inc., Chicago.

Public Relations, Ernest R. Acker, President, Central Hudson Gas & Electric Corporation.

Much Ado About Nothing, Herman Russell, President, Rochester Gas and Electric Corporation Vice-President, American Gas Association.

Increase in Gas in Australia

(By Our Australian Correspondent)

The activities of the Australian Gas Light Company of Sydney increased steadily during 1935. Extensions of main initiated during the year to supply new customers amounted to a total of 28 miles 1304 yards, as compared with 15 miles 647 yards in 1934. The quantity of gas issued from the company's works at Mortlake, near Sydney, increased by 379 million cubic feet for the year, equalling 5.2 per cent. About half of the increase in sales was derived from consumers who used gas for industrial purposes and from domestic hot water installations.

Peoples Gas Presents McCarter Medal to Seven Employees

The presentation to seven employes of The Peoples Gas Light and Coke Co. of the American Gas Association's McCarter Medal for saving human life was made a feature of the recent annual meeting of the Peoples Gas Club, employee organization of the Peoples company. Two thousand employes and their families witnessed the ceremony.

The seven men who saved lives using the Schafer prone pressure method of resuscitation were: Nicholas DeFina, Raymond Shanaberger, Nicholas Olker, A. H. Slinn, Fred Lorenz, Howard B. White, and Arnold Menet.

Presentation of medals to these men raises the total of Peoples Gas employes so honored to 34.

A. W. Jones, Sales Promotion Manager of SGE

The appointment of Mr. Arthur W. Jones as sales promotion manager has been announced by the Standard Gas Equipment Corp., New York. Mr. Jones has had extensive experience in gas appliance and specialty merchandising fields. For several years he was advertising manager of the Standard Gas Equipment Corp. and later was associated with the Cramer-Krasselt Co., advertising agents, where he worked on the Norge refrigerator and Maytag washing machine accounts, as well as that of Standard Gas Equipment Corp.

We are advised that Mr. Jones will be glad to coöperate with gas companies and dealers in developing local campaigns on gas ranges.

Will Devote Consumer Campaign to Industry

Consumer advertising plans of Minneapolis-Honeywell Regulator Co. for the coming year reveal a unique plan which has for its main objective the creation of greater interest on the part of consumers, large space operators, and industry in the subject of automatic heating and air conditioning, according to George B. Benton, advertising manager of the company.

Starting in January with page and two-column copy in "Time," "Collier's," "American Home," "Nation's Business," and "Business Week," the company initiated the campaign under the general theme—"Be Modern—Install Automatic Heating and Air Conditioning."

A quotation from a typical piece of copy reads: "Make Life Worth While —Install Automatic Heat and Air Conditioning. It's the modern thing to do for health and downright economy when you build or modernize. There is a competent, informed architect, engineer or dealer in automatic heat and air conditioning within reach of your phone. He has interesting information for you on what can be accomplished in your building or home."

This campaign, which will continue through January, February, March and April, will be followed immediately by a campaign selling the public on air conditioning under the general theme—"Air Conditioning is Knocking at Your Door." This will stress the fact that air conditioning will pay big dividends in health and comfort to the home owner and reward liberally the hotel, apartment, or theatre owner in increased patronage and satisfied customers. Industry is also reminded of the fact that year-'round air conditioning improves plant processing and employee efficiency. This campaign will continue throughout the months of March, April, June and July in national magazines such as those mentioned above.

In connection with the campaign, an informative booklet entitled "This Thing Called Automatic Heating and Air Conditioning" has been published by the company, which is a general discussion in laymen's language of the essentials of automatic heating and air conditioning, and is designed to clear up many of the misunderstandings and misconceptions which are still current, especially about air conditioning.

New Ruud Sales Manual

The new Ruud sales manual and catalog, entitled "Gas Changes Cold Water Into Liquid Sunshine," is complete in every detail. It is composed of nine large envelopes with a special spring binding. The first is titled "The Salesman," and contains a fund of material to help him in his job of selling water heaters. Another envelope, titled "Direct Mail," contains a large number of suggestions for direct mail pieces. Other envelopes are titled "General Folders and Display," "Newspaper Advertising," "The Employee, Home Service the Plumber." In another envelope is completely illustrated and described the Ruud Conversion Heater, and another, the Ruud Tank Water Heater. Another contains valuable material on "Volume and Commercial Water Heating." It is one of the most comprehensive sales manuals on gas water heating ever issued.

Industrial Gas Section Meeting

The General Commercial and Hotel and Restaurant Sales Conference of the Industrial Gas Section of the American Gas Association will be held at The Mayflower, Washington, D. C., Monday and Tuesday, May 25 and 26, 1936.

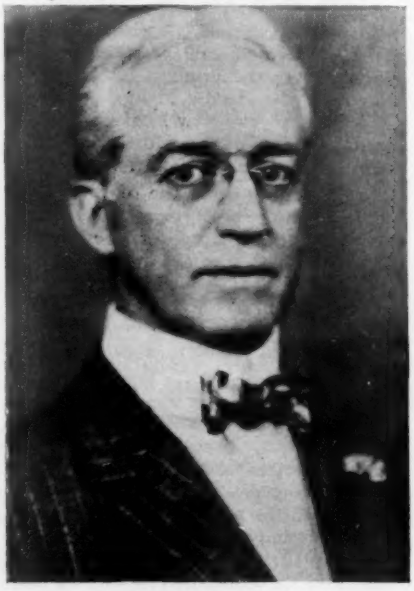
E. P. Prezzano Elected President Westchester Lighting Co.

Edward P. Prezzano, an outstanding figure in the public utility industry for many years, has been elected president of the Westchester Lighting Co., the Yonkers Electric Light and Power Co. and the Bronx Gas and Electric Co., to succeed the late Eugene H. Rozenquest, who died January 26 last.

Mr. Prezzano has been with the Consolidated Gas system since 1901 and with the Westchester Lighting Co. since January 22, 1924, when he was elected secretary. On April 23, 1926, he was made vice-president.

J. F. Robinson Succeeds J. B. Tonkin as President Peoples National Gas Co.

John B. Tonkin, president of the Peoples Natural Gas Co., Pittsburgh, Pa., and affiliated companies, announced his retirement from active duty.



JOHN B. TONKIN

Mr. Tonkin started in the gas business as a water boy on a pipe-line construction job during summer school vacations. His first full-time job came in 1894, as a pipe-line superintendent's clerk with the River Gas Co., at Marietta, Ohio. From this he advanced to the purchasing department of the National Transit Co., at Oil City, Pa.

He came to Pittsburgh in 1902 to become treasurer of the Hope Natural Gas Co.; was elected vice-president and general manager of the Peoples Natural Gas Co. in 1918, and became president of the company in 1933.

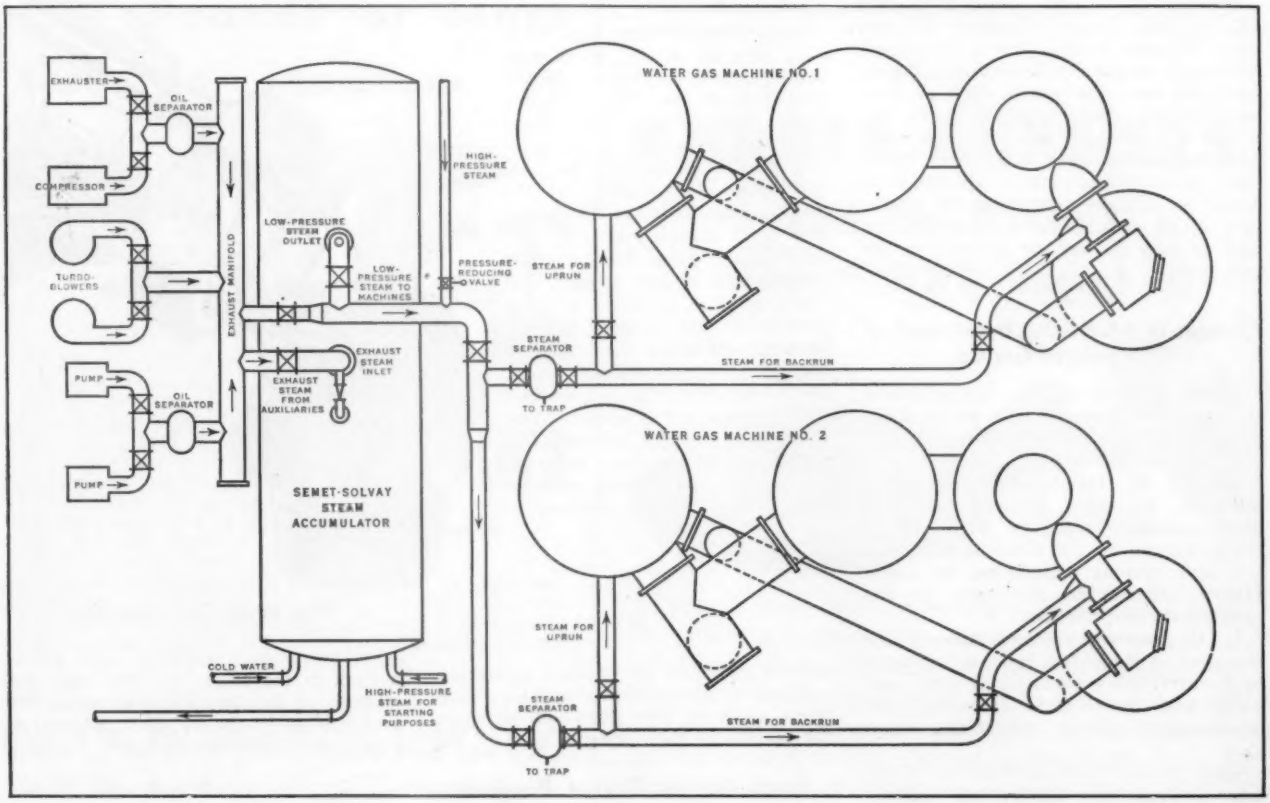
J. French Robinson, vice-president, will succeed Mr. Tonkin as president of the Peoples Natural Gas Co. and its affiliates. S. C. Preston, chief engineer of the Peoples Natural Gas Co., is to become vice-president of that company, and Christy Payne, Jr., of the same company, is to be assistant to the vice-president.

Mr. Robinson is said to be one of the youngest executives in the natural gas industry. He is a graduate of West Virginia University and holds an honorary degree of Doctor of Science from the University of Pittsburgh. He has been connected with the Peoples Natural Gas Co and affiliates for 15 years, acting as manager for the Lycoming United group of companies since 1930. He has been vice-president of the Peoples Natural Gas Co. since 1933.

Gas Holder Inspection

Cruse-Kemper Co., Ambler, Pa., recently issued a four-page folder describing their inspection service for gas holders. It is illustrated and lists the points covered by the inspection service.

FLOW SHEET OF STEAM ACCUMULATOR



The above diagram illustrates how a Semet-Solvay steam accumulator fits into the operation of a water gas plant, or as an equalizer in any steam line where some part of the utilization is intermittent.

Steam is picked up from the compressors, blowers, exhausters, pumps, and other steam driven equipment. The accumulator takes it off the lines and utilizes it to provide steam for the uprun and backrun portions of the gas making cycle. This utilization relieves the power plant of the necessity of furnishing process steam.

In water gas manufacture, the accumulator balances the operation of the blower, which is on during the blast and conserves the steam needed to drive it, for gas making, which comes between the blasting steps of the cycle. One accumulator will serve a number of machines and driving units.

The Semet-Solvay steam accumulator is a new design of a tried and necessary gas plant adjunct. Circulation and mixing are provided by a patented steamlined system of baffles. The unit is built in sizes to suit individual plant requirements. A number of them are in successful service in the gas industry.

Emco Safety Seal Regulator Has Underwriters Approval

After examination and tests in the Underwriters Laboratories, the EMCO Safety Seal Regulator has been approved by this body as being non-fire hazardous and the makers, the Pittsburgh Equitable Meter Co., have been notified that the Underwriters Seal of Approval may be placed upon it.

It is said that this regulator, which is designed for use in controlling the pressure on small gas burners, such as refrigerators, ranges and the like, can be safely installed in kitchens without the necessity of running a vent line from the diaphragm chamber to guard against possible diaphragm failure. The design provides two diaphragms, the lower one being the customary control diaphragm, while the upper diaphragm is actuated only in the event of control diaphragm failure or seepage through the same, and in so doing not only closes off leakage through the vent on top of the regulator, but also causes the main gas flow through the regulator to be shut off. This indicates to the service man that there has been diaphragm leakage and enables him to locate and repair the trouble immediately.

New Butane Gas Plant at Brewton, Ala.

Working drawings are nearing completion and bids will be asked soon on a $40,000 butane gas plant for the City of Brewton. This is one of the first in a series of gas plants to be constructed in Alabama with the aid of PWA appropriations for the purpose.

New Gas Plant for Sebring, Ala.

Contract has been awarded by the PWA for a gas plant and distributing system in Sebring, to cost $55,365. The award was made to the Paul Smith Construction Co., and work on the project is to get under way immediately, it has been announced.

Air Hygiene Foundation of America, Inc.

Air Hygiene Foundation of America, Inc., has been formed by a large group representing various industries, with headquarters at Thackaray Avenue and O'Hara Street, Pittsburgh, Pa. The purposes of this organization are to conduct investigations of and to stimulate research on problems in the field of air hygiene and to gather and disseminate factual information relating thereto. It will also coöperate with and assist other agencies active in this field and will collaborate in the coördination of such research efforts. A comprehensive investigation has been begun at Mellon Institute of Industrial Research, Pittsburgh, under support of Air Hygiene Foundation of America, in which the hygienic, technologic, and economic aspects of air contamination, especially by dust in the industries, will be studied.

Additional information regarding these activities will be supplied upon direct request.

New Roper Catalog

George D. Roper Corp., Rockford, Ill., recently issued "Catalog Y," and have included in the catalog loose-leaf, four-page sheets illustrating and giving complete specifications of each of their new models, sizes, color of finish, etc. There are several cuts showing various designs of model kitchens. Other cuts show various parts of the range in detail, as well as describing the operation of all accessories. A copy of the catalog may be had by addressing the company.

Changes in Advertising Department of Consolidated Gas Co.

Announcement of the consolidation of the advertising activities of the Consolidated Gas Co. and the Brooklyn Edison Co. has been made.

Harold R. Henderson, advertising manager, Brooklyn Edison, has been made assistant in charge of the advertising bureau of the Consolidated Gas Co. and system companies, to assist Henry Obermeyer, assistant to the executive vice-president.

L. G. Barrow, assistant advertising manager of Brooklyn Edison, has been made advertising manager of that company, and B. Duffield Hamilton has been made assistant advertising manager.

Cyril Nast is now art director of the Consolidated Gas advertising bureau, and Helen Rockey is copy chief.

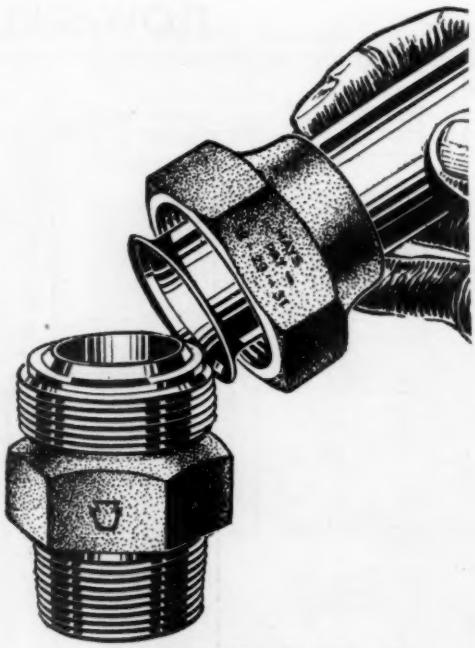
New Water Gas Plant at Cedar Falls, Ia.

The City of Cedar Falls, Iowa, has awarded a contract to the Semet-Solvay Engineering Corp., of New York, for a new water gas plant. The new equipment will include a gas holder, two Semet-Solvay water gas machines, blowers, a condenser, tar extractor, exhausters, purifiers, tar storage tank, meter, and scales. The water gas machines will be equipped for backrun operation.

Work on this contract will be undertaken at once. The plant will be ready for service in the spring.

Hays Double Seal Copper Connections

Hays Manufacturing Co., Erie, Pa., recently issued a 24-page catalog printed in colors, in which they feature the "Hays Double Seal Connection," the Hays method of joining copper pipe. The two-faced flare of the copper tube fits perfectly on the double seal fitting—a 45 degree plus a 90 degree joint. It is a joint made tight, but is easily broken with a pipe wrench, for every joint is in itself a union connection. In hooking up gas burning appliances they make a connection that is leakage proof. More than 400 styles and sizes of double seals are available. The catalog is freely illustrated and includes valuable data material. A copy of this catalog may be had on request to the company.



Hays Double Seal Connection

Rosco Nettles Elected President Tampa Gas Co.

Rosco Nettles, manager of Tampa Gas Co., Tampa, Fla., since 1910, has been elected president of the company. He succeeds John Gribbel, Philadelphia and Mountain Lake, who was elected chairman of the board.

Mr. Nettles will continue as manager. Other officers elected are John Bancker Gribbel, son of the former president, vice-president and treasurer; Harry M. Eberhard, secretary.

Mr. Nettles has been connected with the company for the past 34 years, starting as a clerk in the office. He was appointed manager at the age of 24 and was at that time said to be the youngest manager of a gas plant in the United States.

Haywood Joins Staff EMCO

The Pittsburgh Equitable Meter Company and subsidiary, the Merco Nordstrom Valve Company, announce that W. E. Haywood has joined its sales department. Mr. Haywood has had considerable experience as a measurement engineer and was formerly connected with the Foxboro Company, Foxboro, Mass.

Mr. Haywood will cover New England territory, selling and servicing EMCO Gas Meters and Regulators and Nordstrom Lubricated Plug Valves.

EXTREMELY COLD WINTERS

Will create no holder difficulties if you install and operate a
STACEY-KLONNE DRY SEAL GAS HOLDER

For proof of statement please read the tabulation record of performance for 1935-1936 the coldest Winter and of longest duration in all communities where Stacey-Klonne holders are in operation.

NOTE: Tabulation Covers All Installations Stacey-Klonne Holders in U.S.A.

Capacity Cu. Ft.	Location	State	Operation	Operating Performance	Added Winter Operating Cost	Years in Operation
2,000	Walden	N. Y.	Continuously	Perfect	None	One
6,000,000	Syracuse	N. Y.	Continuously	Perfect	None	Four
30,000	Cleveland	Ohio	Continuously	Perfect	None	Two
1,500,000	Kalamazoo	Mich.	Continuously	Perfect	None	Four
4,000,000	Reading	Penna.	Continuously	Perfect	None	Four
100,000	Peoria	Ill.	Continuously	Perfect	None	One
50,000	Belle	W. Va.	Continuously	Perfect	None	One
300,000	Belle	W. Va.	Continuously	Perfect	None	One

Your holder replacements and new installations should be a
STACEY-KLONNE DRY SEAL GAS HOLDER
Designed and Erected by

STACEY BROTHERS
GAS CONSTRUCTION CO.
Cincinnati, Ohio

100 Pounds or More Cut to Medium or Low Pressure

Fulton Toggled Reducing Regulator

GAS pressures of 50 to 100 pounds or more in tanks or transmission lines are reduced to medium or low pressure in the distribution system by the Fulton Toggled Reducing Regulator. It can be equipped to operate with either natural or manufactured gas, maintaining the desired delivery pressure. For reversing furnaces, it is constructed with oversize valves. Also adapted for control of By-Product Coke Oven Gas. Ask for Circular No. 2573.

The
CHAPLIN-FULTON MFG. CO.
28-40 Penn Ave. Pittsburgh, Pa.

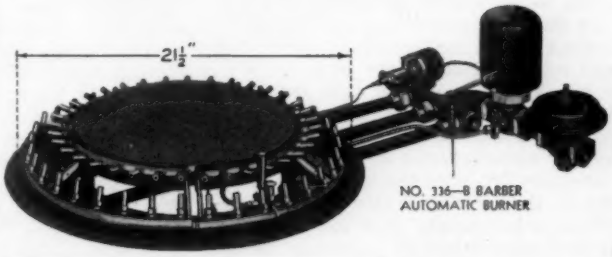
The Outstanding Gas Purifying Material » » »

Highest H_2S removal combine with complete removal of traces. Physical structure insures very low box back pressures

THE RECOGNIZED PURIFYING MATERIAL FOR VAPOR PHASE GUM CONTROL.

THE ALPHA-LUX COMPANY, Inc.
192 Front St., New York
Philadelphia Chicago

Pick BARBER BURNERS —and be RIGHT the FIRST Time!



FOR 18 years, Barber Conversion Burners have been in a class by themselves—not just because we say so, but because that many years of patient development put them there. Barber Burners cut down removals and servicing. It's the old story—the EXPERT vs. the EXPERIMENTER—and the Gas Companies, the Dealer, and the Public have learned which one to pick! Barber is the *safest* Burner to sell on the time payment plan. Here are some of the real reasons why Barber Burners consistently outsell and out-perform other Conversion burners:

- Eight different sizes to accommodate round grate diameters from 12" to 34". Also "tailor-made" to *suit* and *fit* the grate dimensions of oblong furnaces or boilers.
- Insure a "scrubbing" flame action on side walls of firebox, at the proper level, with 1900° Fahrenheit flame temperature.
- No fire brick or refractory elements needed—Barber Burners require only 70% of the installation time of Burners using such elements.
- Equipped with the improved Barber noiseless jets, unequaled for air-mixing efficiency.
- Furnished with Klixon or Baltimore Safety Pilot Control—positive and accurate.
- Listed in the A.G.A. Directory of Approved Appliances.

We supply Sales Literature, Specification Data Sheets and Practical Sales Assistance. Write at once for latest Illustrated Catalog and Revised Price List.

THE BARBER GAS BURNER CO.
3704 Superior Ave. Cleveland, Ohio

BARBER *Automatic* JET GAS BURNERS

● for Warm Air Furnaces, Steam and Hot Water Boilers ●
and Numerous Other Heating Appliances

Annual Meeting Southern Gas Association

The Southern Gas Association held their annual meeting at New Orleans, La., February 19 to 21.

Greater cooperation between utilities and retail merchants was urged at a sales conference in connection with the meeting when two sides of the question were presented. John W. Moore, of the Colonial Home Furnishings Co., New Orleans, was critical of the sales of gas appliances by utilities in competition with retail furniture dealers. Abraham Burglass, a past president of the New Orleans Retail Furniture Dealers Association, however, asserted he had found the competition of the local utility to be fair and not oppressive to the retailer.

Mr. Moore contended that promotion of markets for the sale of new gas appliances can be managed more economically by manufacturers through the utility companies but once the demand is established, the most efficient method of distribution is through retail channels. He claimed that instead of promoting the use of gas, the utilities are now selling appliances. He declared no one dealer without a monopoly can sell all the consumers in a given locality. Mr. Moore urged mutual cooperation as the best way to adjust the situation.

Residences having central gas heating plants or complete individual gas heating apparatus for the entire home have shown a decided drop in the fire insurance loss ratio on dwellings, according to current records of fire underwriters, said W. A. Hudson of the Birmingham Gas Co. at the Thursday morning general session.

J. T. Taylor, of Hendersonville, N. C., representing the Pittsburgh Water Heater Co., discussed in detail the advertising possibilities of "tying-in hot water with other gas products."

A radio talk by Charles W. Person, director of publicity and advertising of the American Gas Association, who spoke from New York City, related experiences in promotional advertising on behalf of gas appliances to increase the use of gas.

Selling gas for hot water service was the topic discussed by J. B. Hodge, of the Baton Rouge Electric Co., who described the automatic water heater as one of the best appliance sellers in the retail trade today. An intensified campaign for the sale of hot water heaters was urged by L. B. Denning, Jr., of the Lone Star Gas Co. of Dallas.

Problems of promoting house heating in all its phases were discussed by Dean A. Strickland of the United Gas System of Houston. Plans for gas range sales contests were outlined by W. B. Derwent of the George D. Roper Corp., Rockford, Ill. Decorative fireplaces was the topic discussed by R. F. Cleary of the Homestead Heater Co. of Newark, N. J.

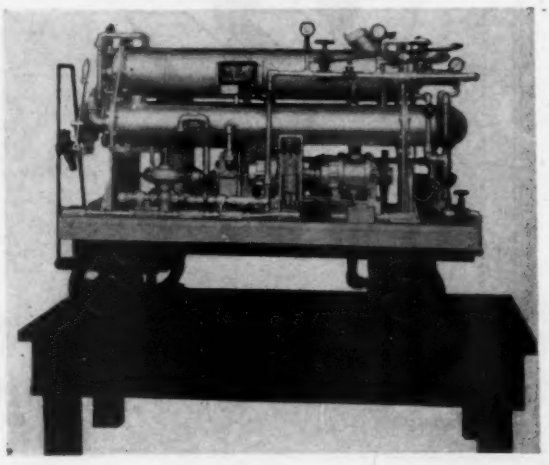
New Inert Gas Unit

Roots-Connersville Blower Corporation, Connersville, Ind., is introducing a new small inert gas unit. This small size unit has a capacity of 1000 cu ft. per hour. Overall dimensions are 60" long by 32" wide by 43" high. Weight is about 1500 lbs.

The mechanism consists of a blower and gas pump, handling air and gas respectively. These elements are delivered separately to a water-cooled combustion chamber, where the gas burns and produces the inert mixture. This is discharged through a cooler to reduce the temperature to the desired point. The drive unit can be either electric motor or gas engine.

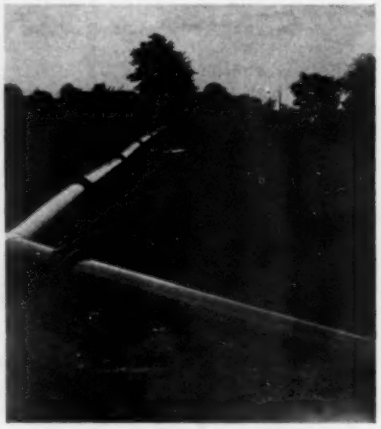
Inert gas, containing either zero oxygen or zero carbon monoxide, when using gas or oil for fuel, can be very economically produced in large volumes. During recent years, the use of an inert gas has come rapidly to the fore, and provides actual savings in plant operation, as well as eliminating hazardous procedures common in the process industries. Purging explosive mixtures from plant equipment is one function.

Roots-Connersville Harrison Inert Gas Producers have been furnished in a wide range of sizes up to 60,000 CFH. Bulletin 100-B12 covers both the portable and stationary types.



Ontario Gas Line

The Union Gas Co. of Canada has completed a 66-mile pipe line to convey natural gas from the Dawn Field to London, Ontario. It included four river crossings, and the working pressure is approximately 300 lbs. per sq. in. The work was in charge of C. E. Steele, general superintendent of Union Gas Co., and R. L. Beran, general manager of Natural Gas Division. Over 1700 dresser couplings were used.



Free Gas Plan Increases Consumption

The "Free Gas Plan" used so successfully by the Coast Counties Gas & Elec. Co., Los Angeles, Calif., in 1935 is now being repeated. Gas used by domestic customers in February and March will be billed at no more than the January total no matter how much gas is used. In 1935 the plan worked to encourage the purchase of a large number of heating appliances at an unseasonable time, and customers increased their use of gas to a point over 20 percent of use in January.

GPM
IRON HYDROXIDE

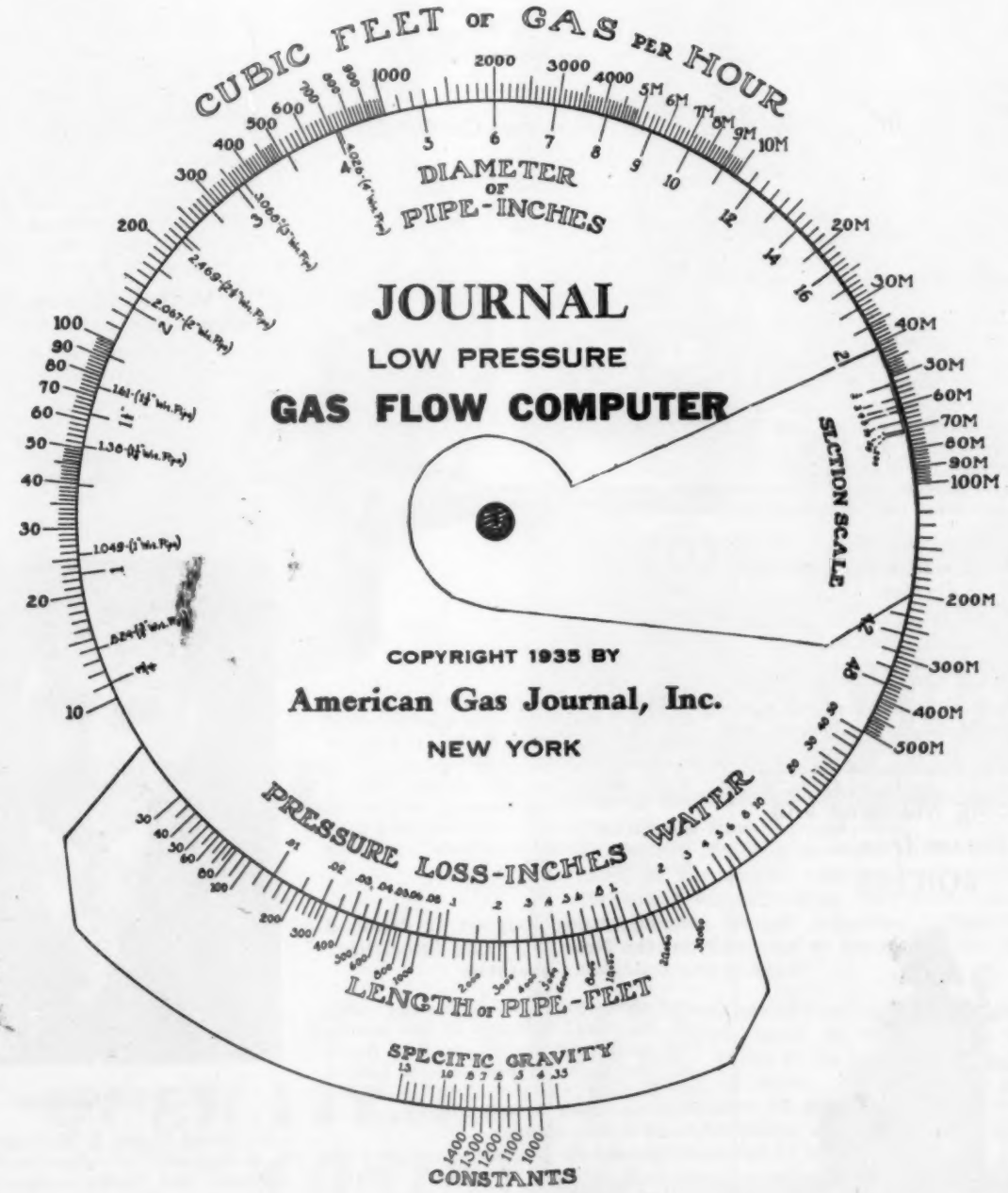
500,000 bu.

of ready mixed iron oxide for gas purification on hand to serve you without delay in any weather by water, rail or truck

GAS PURIFYING MATERIALS CO.
INC.
LONG ISLAND CITY, N. Y.
PROVIDENCE, R. I.

NEW IMPROVED COMPUTER

FOR LOW PRESSURE



Price $2.50 each

American Gas Journal, 53 Park Place, New York

Industrial Gas Sales Conference in Detroit

The first industrial gas sales conference that has been held under the auspices of the Industrial Gas Section in a number of years will be held at Hotel Statler, Detroit, Michigan, Tuesday and Wednesday, March 10 and 11. The two-day conference will consist of one day devoted to papers and discussions, and one day devoted to an inspection trip of new and outstanding industrial gas installations in some of America's most advanced factories.

The dual theme of Tuesday's sessions will be first, sales and second, new types of equipment that are now available to be sold. Each speaker on the program is an authority on the subject assigned to him. The opportunity for ample discussion has been provided. There has yet to be a similar opportunity to get so much first-hand information on the new technique in selling and in applying industrial gas.

Wednesday's inspection trip will take the entire day. As one industrial gas executive expressed it—"This will be an opportunity to see in operation the kind of industrial gas equipment we will all be selling the rest of this year, next year and the year after." And he was right. Detroit has been the proving ground for the successful introduction of more new types of industrial gas apparatus than any other city.

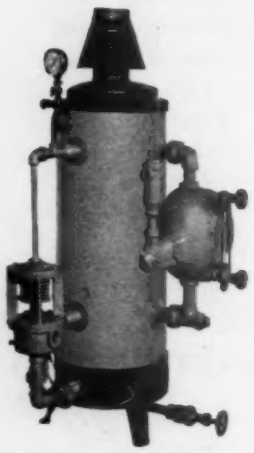
Process Air Conditioning Committee To Meet

L. A. Bickel, Secretary of the Dallas Gas Company, and Chairman of the Committee on Process & Comfort Air Conditioning of the Industrial Gas Section, will preside at the meeting of the Committee at the Hotel Statler, Detroit, Michigan, Monday, March 9th, at 9:30 A.M.

At this meeting reports will be checked on the progress being made in penetrating important air conditioning fields other than residential. Assignments of specialized work for individual committee members for the balance of the Association year will be made.

All gas men and manufacturers interested in air conditioning in factories and commercial establishments are welcome to attend this meeting, which will be held the day before the Industrial Gas Sales Conference and Inspection Trip.

Pressing Machine and Steam Iron— BOILERS

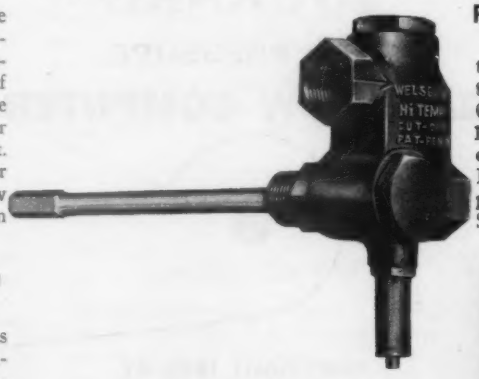


P. M. LATTNER MFG. COMPANY
CEDAR RAPIDS, IOWA

Hi-Temperature Gas Cut-Off

The Welsbach Co., Gloucester, N. J., recently announced the "Hi-temperature Gas Cut-off." This device automatically shuts off the supply of gas to the heater before water temperature can reach 212° F.

Overheating of the water above



proper temperature results in the automatic operation of this cut-off, which closes off the gas to the heater long before a hazardous condition can arise.

The unique feature of the valve is that by simply pressing a button the gas supply can be re-established after the water cools to normal operating temperature.

An Interesting Program Is Promised for the New Jersey Gas Association Convention

A strong program, emphasizing sales, will be offered delegates to the twenty-fifth annual meeting of the New Jersey Gas Association convention to be held at the Berkeley Carteret Hotel in Asbury Park on April 2, 1936, starting at 10 o'clock in the morning.

Following the welcome to Asbury Park by T. R. Crumley, President of Jersey Central Power and Light Company, H. E .Cliff, President of the Association, will review the year's activities. American Gas Association President L. B. Denning will head the list of speakers to follow the business session.

After luncheon, the program will be devoted entirely to sales topics. H. A. Sutton, of Public Service Industrial Fuel Department, will discuss Commercial Gas Sales, followed by an interesting "Mystery Chef Broadcast."

The major portion of the afternoon will consist of a water heater symposium. Lester Ginsburg, Marketing Consultant of Cambridge, Mass., will discuss the New Jersey water heater market. Prof. Gordon B. Wilkes of Massachusetts Institute of Technology will present comparative costs of water heating, using different fuels. R. F. Caniff, General Sales Manager of the Pittsburg Water Heater Company will describe the most modern gas water heating equipment. H. S. Christman, Sales Manager of Philadelphia Gas Works Company, will outline plans for plumber dealer cooperation. William F. Hope, of the Newport Gas Light Company, will conclude with an appeal that gas companies tackle their problems and sell more heaters.

An innovation this year will be the evening banquet. It is hoped that most of the 500 expected delegates will remain to renew friendships, and enjoy the entertainment that will be presented.

R. W. McClenahan Made Manager of Philadelphia American Meter Company

American Meter Company announces the promotion of Mr. R. W. McClenahan to manager of its Philadelphia factory. Graduated from Princeton University in 1924 with the degree of Bachelor of Science, in Science and Mathematics, Mr. McClenahan then devoted two years to post-graduate work at Towne Scientific School at the University of Pennsylvania.

R. W. McClenahan

He joined Helme & McIlenny in 1926 as an engineer, and when the Helme & McIlenny and Griffin companies were combined in 1929 as the Philadelphia unit of American Meter Company he was made Assistant Manager. His appointment as manager became effective on February first of this year.

In recent years Mr. McClenahan has made an intensive study of meter maintenance and performance records, presenting the paper "Factors and Trends in Meter Maintenance" before the American Gas Association Distribution Conference at Cleveland in 1935.

SPRAGUE METERS

REDUCE OPERATING COSTS

THE SPRAGUE METER CO.
BRIDGEPORT, CONN.

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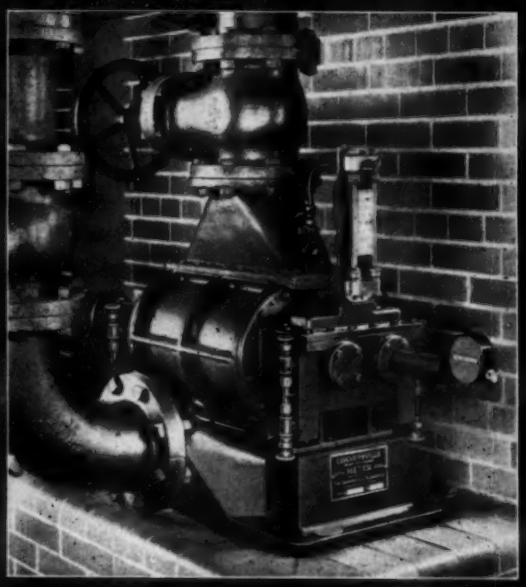
the ACCURACY of Connersville Meters



. . . . is not disturbed by WIDE FLUCTUATIONS in pressure and volume

The rate of flow thru an "R-C" Rotary Displacement Meter may vary from 10% to 150% of the normal rated capacity without disturbing the accuracy. The meter can be equipped to record pressure, temperature and rate of flow and to register in cu. ft. of standard gas passed.

This definitely established accuracy is maintained without need of adjustment, year after year. There is no internal contact or other cause for wear. Moderate first cost, low maintenance expense and long years of accurate measuring service make this the economical meter to buy.

Roots CONNERSVILLE
BLOWER CORP.
CONNERSVILLE, INDIANA
NEW YORK • CHICAGO • POTTSTOWN, PA. • SAN FRANCISCO
PITTSBURGH • BOSTON • DETROIT • ST. LOUIS • LOS ANGELES

Getting Our Share of the Business Increase

(Continued from page 38)

(a) the Domestic New Business Expense per customer plotted against the E.A.R. (Estimated Annual Revenue) per domestic customers expected from the New Business effort. (b) The number of domestic customers per salesman used for various amounts spent per customer on New Business. (c) It shows the *net* costs per dollar of E.A.R. for these various New Business expenses/customer.

What is Meant by Domestic New Business Expense as Used in Curve B

The domestic new business expense per domestic customer as here used is the total Domestic Sales Expense less Management Salaries and less House Heating Expense. It includes all salaries, commissions and bonus paid Domestic Salesmen—all Domestic Merchandising and Promotional Advertising, all Demonstration Expenses, and all Miscellaneous Supplies and Expenses. It is the entire Domestic Direct Selling Expenses, and no deductions or additions for profit or loss on merchandise has been made. Profit or loss, if taken into consideration, would not give us the amount of total selling effort.

For instance, suppose the *profit* was equal to the total domestic sales expense (which may be true where gas ranges only are merchandised or where the greatest emphasis is placed on gas range sales rather than gas water heaters, refrigerators, etc.) then, if, in such a case, we deducted the profit, there would be no selling cost/customer. We have purposely intended to reflect the total Domestic New Business effort as the *base* of our curve.

What is Meant by E.A.R. in Curve B

The E. A. R. or Estimated Annual Revenue, is the revenue the gas company expects to receive in one year from the use by the customers of the appliances sold to them. The particular E.A.R. figures used here are all on a comparable basis, as each company uses the same method of estimating annual revenue from the various appliances sold.

What is Meant by Net Cost per $ of E.A.R.

The dots in between the horizontal lines across the top of Curve B. represent the net costs per $ of E.A.R. The net New Business Expense was determined by taking the Domestic New Business Expense (as previously defined) and deducting from these the gross profit on the merchandise sold. The net cost per $ of E.A.R. was then determined by dividing the net New Business Expense by the total E.A.R. This net cost per $ of E.A.R. is in a way a measure of the efficiency of the New Business Department. The net cost per $ of E.A.R. as shown by the dots correspond to the amount of Direct New Business Expense spent per customer for that particular company.

What is Meant by Number of Domestic Customers per Salesman

In arriving at the number of domestic customers per salesman, we determined the number of *man weeks* and divided this by 52 to get the number of salesmen that company used on a yearly basis. This figure divided into the total number of domestic customers gave us the number of customers per salesman. Here again the curve which represents the number of customers/salesman corresponds with the amount of Direct New Business Expense per customer. For instance, a company who spent say $2.00/customer had 2000 customers/salesman. The company who spent $1.00/customer had approximately 3000 customers/salesman and the company who spent $5.00/customer had 500 customers per salesman. The E.A.R. per salesman remains about the same whether the salesman has 1000 or 3000 domestic customers.

Note from Curve B the Following Significant Facts

1. The E.A.R. per customer increases at a greater rate than does the expense per customer. This shows that increased E.A.R./customers is obtainable at a lower gross cost per $ of E.A.R. Hence we can get more E.A.R./customer at a lower cost than we can get less.

2. The net cost per $ of E.A.R. (as indicated by the dots between the horizontal lines at the top) is not a function of how much E.A.R./customer that is secured. The net cost is low/$ where E.A.R./customer is high and it is also high/$ where E.A.R./cost is high. Similarly, the cost/$ is low where E.A.R./customer is low and is also high/$ where E.A.R. is low/customer.

3. The net cost per $ of E.A.R. is probably significant as a measure of—

(a) The competitive conditions confronting the individual gas company.

(b) The relative efficiency of the local New Business Manager.

BUT—There is no apparent relation between a high E.A.R./customer and the net cost and between a low E.A.R./customer and the net cost. The chances are just as good to get a low net cost per $ of E.A.R. with a large E.A.R. per customer as there is with a small E.A.R. per customer. The net costs are also influenced by your dealer policy. The dealer policy influences the amount of appliance sales that are placed on the company's books. Our own company policy is to lean over backwards to win the cooperation of the dealers. We offer no terms or prices that the dealers cannot meet.

What About the Large Company?

You may well ask can these results be attained in a large company? I do not know—but insofar as we can judge, the large company is securing as much E.A.R. per customer as the small company, where they have budgeted an equal amount per customer. For instance, a company with 90,000 customers budgeted an E.A.R./customer increase of $1.00 and secured $1.00. A smaller company with 40,000 budgeted $1.25 per customer and obtained $1.10. A company with 10,000 customers budgeted $1.75 and got $1.70. What is more, a study of the performances of salesmen in large and small companies discloses *very little difference in their individual results,* certainly no wider difference than exists between salesmen among the smaller companies.

The only item that we have found that in any way explains the difference in E.A.R./customer results, between a large and small company, is the amount of sales effort/customer put forth. Invariably the companies, whether small or large, that are securing the best results are those that are putting forth the greater sales effort The E.A.R. per salesman seems to vary from $3500 to $4500 and is independent of the number of customers per salesman. Hence, to get more per customer requires more salesman power/customers.

Large Increase Desirable

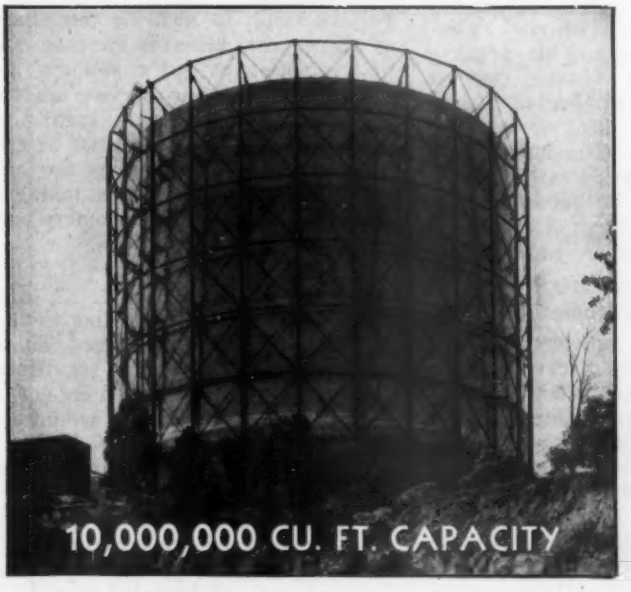
There are undoubtedly managers who will say this is all very well and good—BUT we do not have the dollars to put into this business at this time. I can well sympathize with this viewpoint. However, I would like to point out that it would seem the better part of wisdom to beg or borrow the necessary funds with which to secure a substantial share of the general business increase than to be content with a nominal portion thereof. The reason for this statement is evident when we realize that the gas industry today is on trial and there are those who believe that it is

(Continued on page 58)

SUPERIOR

Gas Meters
Provers
Service Cleaners
Diaphragms
Repairs

SUPERIOR METER CO.
167-41st Street
Brooklyn, N. Y.



HIGH PRESSURE GAS HOLDERS LOW PRESSURE
PURIFIERS · TANKS · CONDENSERS
STEEL PLATE CONSTRUCTION
INTEGRITY GOOD WORKMANSHIP FAIR DEALING
CRUSE-KEMPER CO.
AMBLER, PA.

THE ARROW-HART AND HEGEMAN ELECTRIC CO.
HARTFORD · CONNECTICUT

CHACE THERMOSTATIC BIMETAL
"It Bends with the Heat"

Chace Thermostatic Bimetal is that ever silent, seldom seen, positive acting element, now being used by so many large manufacturers to automatically open and close electrical contacts, regulate drafts, operate safety devices, open and close valves, and perform many other automatic duties. For dependable action at pre-determined temperatures, use Chace Thermostatic Bimetal.

W. M. CHACE CO.
1610 Beard Avenue - - - Detroit Mich.

(Continued from page 56)
unable to withstand competition and, therefore, increase its revenues and earnings. One emphatic answer to such doubters is to make an increase of such size that it will immediately not only reflect substantial increases in gross revenues and earnings of the company but such increases will be in such proportion as to materially change the customer's conception or acceptance of gas as a fuel.

It is my belief and contention that a 15% increase in one year is much more valuable than a 20% increase in a three year period even if obtainable at a 50% higher cost per $ of E.A.R. However, it is evident, from a study of Curve B, it is possible to secure a 15 or 20% increase in one year at comparable costs to a 5 or 10% increase.

The real hurdle of the Gas industry is Management's need to secure net earnings. To get a large increase in New Business means in most cases a temporary shrinkage in net earnings, for the reason increased revenue from New Business does not show up in full during the period of the large New Business expenditure.

Hence, as I see the picture, Managements will have to be sold that it is better to suffer a temporary shrinkage in net earnings and thereby obtain substantial increases in gross revenue, than it is to perhaps maintain nets through curtailing New Business and other items of expense—but to see the gross revenue remain about stationary and the public's acceptance of Gas decline. Too many fine Gas New Business programs have been curtailed or eliminated altogether because of the demand on part of Management for net earnings. This year particularly, due to a general business increase, is it not the best policy to spend enough money for New Business so that a real substantial increase in gross can be secured, and the public's acceptance of Gas raised to a point where future sales will be easier?

Special Sales Aids

There are two other sales tools which we observed were extremely valuable in getting results for at least three gas companies. Their results were far in excess of those companies who did not have these sales tools available. For instance, where some of the other companies were selling 5% of the customers water heaters, these companies were selling 8% and 10% and 15% of their customers—one of these companies even sold gas ranges to 22% of its customers. They also sold gas refrigerators to some 5% to 7% of their customers. These two important sales tools were—

(1) A market survey
(2) Customer attitude survey

Market Survey

I do not have time to explain in detail how these were made—and what was learned from them. However, their value can be gathered from the following information which they produced.

(1) The market survey gave information on the following for each customer—

(a) Cooking—Kind of fuel used for
(b) Refrigeration—Kind used
(c) Water heating — Fuel used and method of obtaining
(d) House Heating—Fuel used and method of obtaining
(e) Kitchen Heating—Fuel used and method
(f) Space Heating—No.—gas—elec—oil—etc.
(g) Kind of dwelling—1 family—2 family—3 family or apartment

This information enabled the companies who had made such surveys to intelligently direct and train sales personnel to sell against each particular type of competitive service, to concentrate its direct mail advertising against the customer using competitive service. This type of survey proved so valuable that we have just recently conducted a similar survey among all of our gas and electric customers. The information is placed on Hollerith cards so that special lists can be secured automatically. The estimated cost when secured through meter readers is 4c/survey.

Customer Attitude Studies

The other sales tool recommended was customer attitude survey. What do we mean by customer attitude studies? We mean the determination of customers' attitude towards the use of gas for (say) cooking, for refrigeration, for water heating, for home heating and for space heating. Not only their attitude towards these services but their knowledge of the advantages of gas for these various services, their understanding of the comparative costs of gas and competitive services for these operations. In fact, a thorough understanding of what our customers know about our services, their misconceptions and, therefore, the places where changes in technique are needed, changes in advertising methods are required or, in general, the improvement of our selling technique. Such a customer attitude survey tells you whether your salesmen are getting their story over effectively to your customers and it tells you whether your advertising is effective. As an indication of the importance and the value of such a study, let me cite you the following:

Here are the sales results of three companies on gas water heaters:

	% of customers sold
Company A	12%
Company B	4%
Company C	2%

Company A, B and C customers had a thorough understanding of the following:

That gas water heaters were more efficient—smaller piping and tempering tanks save gas and proper location of heaters made for economy.

Company A and Company B customers had an understanding that rates had been reduced, although rates in Company C had also been lowered.

Only in Company A did customers have a true knowledge of the comparative cost of heating water by gas.

These studies give us some indication of the reasons why certain companies are not accomplishing as satisfactory results as some other company and we believe as the fourth step, and maybe one of the most important steps, in securing our share of the general business increase is a determination of our customers' attitude towards our service and a knowledge of the facts regarding same. Such studies need not be expensive since these studies are obtained by sampling—that is, taking a certain percentage of customers and determining their reactions.

General Conclusions

In conclusion, I would like to say that my observations, based on a knowledge of the facts, regarding sales policies of a large number of gas and electric companies, would indicate that the future of the gas industry is as bright as you gentlemen who shape the industry's policies care to make it. Such losses as we have suffered are economic and therefore temporary, or they were due to a lack of knowledge on our part and that of our customer—one of which has been corrected through M.I.T. tests and other test data, and the second is on a way to solution. We have ample evidence of the industry's ability to withstand competition—and to make large gains—where aggressive action was taken. Therefore, the industry that succeeds in supplying the fuel needs of the

(Continued on page 60)

Announcing

HOUSEHOLD GAS WATER HEATING

A MANUAL FOR RETAIL SALESMEN

A 142 page book, size 5½ x 8, bound in cloth.

This book will comprise the series of articles published in the American Gas Journal under the caption "Domestic Gas Utilization," Water Heater Division, written by Charles W. Merriam, Jr., Division Commercial Manager, Roanoke Gas Light Co., Roanoke, Va.

Mr. Merriam has added new material to each chapter, bringing it up-to-date. This book tells the salesman what he has to know to sell successfully gas water heaters.—How to figure correct capacities to give a satisfactory service. It gives valuable material to help build the gas water heating load.

Chapter 1—Engineering ABC's

Chapter 2—Water Heater Types

Chapter 3—Hot Water—How Much?

Chapter 4—Gas Consumption for Water Heating

Chapter 5—Water Piping & Installation

Chapter 6—What Size Heater

Chapter 7—Automatic Heater Accessories

Chapter 8—Competitive Water Heating

Chapter 9—Hot Water—For What?

The National Gas Water Heater Campaign sponsored by twenty manufacturers begins February 1st. The Water Heater Committees of the American Gas Association and the Gas Appliance and Equipment Manufacturers Association will furnish you every sales help except TRAINED SALESMEN. A study of Mr. Merriam's book will fit your salesmen to get the most out of the water heater campaign. Every water heater salesman will want his copy.

Price of single copies $1.50 postpaid.

Liberal discounts for quantities.

AMERICAN GAS JOURNAL

53 Park Place **New York City**

(Continued from page 58)

future will be that industry which *outsells* its competitor and not because one has a corner on all of the advantages. If we want our share of the general business increase, we must first resell our executives—second, set a proper objective, and third, supply the necessary sales tools and correct sales policies with which to reach that objective. Your share is waiting. You are the ones who will determine whether or not your share will be in the cash drawer at the end of *1936*.

Pressure Regulation for Appliances

(Continued from page 26)

for a pressure loss test with the valve in its normally open position, the inlet pressure set at 2" of water, and the rate of flow increased until the outlet pressure is at 1.7" of water, i. e., .3" of water pressure difference. This rate of flow is called the throughput capacity and can be noted on the curves.

From this curve sheet we can now determine the capacity of the regulator. We have noted on this curve sheet three interesting points. The first is that rate of flow at which the 3½ and the 10½" curves first spread apart by ½" of water; this is marked C_2; the next is that rate of flow at which the lower of the two curves first reaches a point ½" below the standard setting point—this is C_1. The next, that rate of flow which absorbs .3" of water pressure with the valve wide open is labeled C_3. The lowest of these three is the "limiting capacity" of the regulator.

To make these curves is not a difficult matter. A certain amount of care must be exercised in making the pressure taps on which the inlet pressure and outlet pressure are to be gauged. There must be no burrs at the taps, and they should be eight pipe diameters from the regulator body. Accurate meters should be used. With these normal precautions, any laboratory can make the curve shown, and then on one chart tell all there is to be told about appliance regulator performance.

With these curves available for all regulators, the appliance designer, or the gas company should have no difficulty in selecting the size and type regulator best suited for any appliance.

We have listed above some of the advantages in efficiency and service to be gained in using pressure regulators on appliances. Accurate pressure regulation is not a cureall for all appliance trouble, and there are no doubt many appliances and situations which would not benefit materially in using them. However, our best appliances usually have them incorporated as initial equipment, and there is a very marked tendency to extend their use to cheaper and smaller appliances. It is predicted the correct pressure regulators will play an important role in the near future in insuring higher appliance efficiency and decreased cost of appliance servicing.

Wrinkle Remover Contest a Success

The "Wrinkle Remover" contest staged by the Seattle Gas Company, Seattle, Wash., during November resulted in the installation of $32,664 in gas appliances, more than 200 percent of quota, and the securing of 100 new customers. During 1936 the sales force are striving to double 1935 sales each month. Each month will be featured by salesmen's contests designed to encourage friendly rivalry in competition for prizes. The January contest was entitled "Get Out of the Red." Salesmen's names were written on the board in red and their quota and sales posted. When a salesman exceeded his quota his name was rewritten in white and he became eligible for a prize.

The February stunt is a Dividend Contest. For each range, automatic waterheater or refrigerator sold the salesman gets one share of non-participating stock in a mythical corporation. As soon as a salesman reaches his quota his stock becomes participating and he is eligible to share in a division of the profits. These profits will be one dollar for each range, waterheater or refrigerator sold by the entire group. Dividends are declared only on participating stock so salesmen are out to get their quotas of 5 ranges and 5 waterheaters. Sales inducement is a special range at $72.50 and the present stock of automatic waterheaters is being sold at the old price with an advertised increase when the stock is exhausted. Heating salesmen have been given a quota of 7 major heating jobs with a central heating job or conversion burner counting as one and a floor furnace as ¾. Profits set aside for division are $1.50 per job.

A Spring heating campaign will be held in March featuring 10 percent down with first payment in September. The company will push gas ranges in April and May, and hope to make a good showing in the National Range Contest sponsored by A. G. A. A free lamp and clock will be the inducement during the campaign period which will be opened the first week in April with a big cooking school held in cooperation with the Seattle *Times* and the Security Market. A novel plan to make a little billboard advertising look like a lot is being tried out. A quarter showing is contracted for for a month with a second quarter showing going up on the twentieth of the same month. This results in half showing for at least 10 days, and a half showing makes a big splurge in any city.

THOMAS S. KENNEDY

Thomas S. Kennedy, advertising manager of the Standard Gas Equipment Corp., New York, recently passed away.

Mr. Kennedy, although still a young man, had served practically all of his 25 years of business experience with this company and its predecessor, the William M. Crane Co., which was merged with Standard Gas Equipment Corp in 1924. He served in a number of capacities in the advertisement department until 1917, when he interrupted his employment to enlist with the American Expeditionary Forces in France. With the Engineer Corps he saw extensive active overseas and returned to resume his position during 1919.

As the Editor Sees It

(Continued from page 27)

the same time protect our revenue, by the adoption of well-considered objective type rates. Early reports from gas companies which have adopted them indicate that they are proving very successful.

On Point Number 4 Mr. Russell said: "We must improve the efficiency of gas appliances. The electric range is, roughly, twice as efficient as the gas range. One-half the B.t.u. are required to cook electrically as with gas. The top burners of a modern range are about 50% efficient. It should be possible to make a range 80% efficient. There is work to be done by our gas range manufacturers." We repeat what we said in our January issue: "No industry ever prospered without improving its product or the appliances to utilize it."

Finally, the development of new markets involves research,—far more research than is being conducted at the present time in or for the gas industry.

What are we gas men going to do about these suggestions? Old volumes of the Journal tell us what was done in the past when competition threatened to destroy us. The gas industry fought for business and got it. It missed no opportunity; and it used new methods adapted to the changed conditions.

We are told that history repeats itself.

HEATING BUNKER "C" OIL

for carburetting gas requires high pressure and high temperature.

ANDALE BOWED TUBE HEATERS

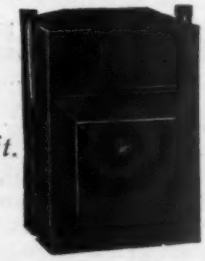
remain tight and are easily cleaned. These are the requirements for continuous satisfactory operation.

ANDALE COMPANY

1600 ARCH STREET

PHILADELPHIA

All sizes up to 3,400 cu. ft. capacity



Meters
Diaphragms
Repairs
Provers
Pumps
Calorimeters
Wet Meters
Gauges
Apparatus

METER REPAIR PARTS

FOR

ALL MAKES — ALL SIZES OF METERS

LARGEST GAS COMPANIES NOW USING OUR PARTS

SEND FOR OUR CIRCULAR ON METER REPAIR PARTS

SAMPLES AND PRICES GLADLY SENT

— 0 —

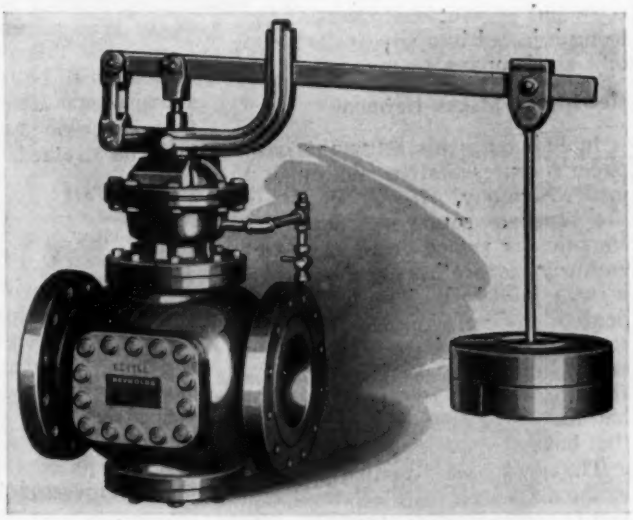
LAMBERT METER CO.

BUSH TERM. BLDG. 4, BROOKLYN, N. Y.

REYNOLDS GAS REGULATORS *for every purpose!*

As long as there is a need for gas control regulation, just that long will the name, REYNOLDS, be symbolic of dependable, accurate, gas control.

REYNOLDS Gas Regulator Company's more than forty years of leadership is proved by the hundreds of thousands of Reynolds Regulators that still give satisfactory performance after years of service.



REYNOLDS New High Pressure Line Regulator, without auxiliary bowl, features a wider range of delivery pressure control, (21 lbs. to 100 lbs.). In addition, Reynolds build High Pressure Line Regulators with auxiliary bowl where complete lock up is required. Write for details.

Reynolds Branch Offices:

421 Dwight Building
Kansas City, Missouri

2nd Unit, Santa Fe Building
Dallas, Texas

Representatives:

Eastern Appliance Co.,
Boston, Massachusetts

F. E. Newberry
Avon, New Jersey

REYNOLDS GAS REGULATOR COMPANY

Anderson, Indiana, U. S. A.

GAS CONTROL SINCE 1892

Building a Gas Load Through Dealer Cooperation

(Continued from page 32)

Dealers See Benefit of United Effort

This schedule was adopted with some 1,100 inches of space previously having been run, because the dealers had learned that cooperative "measures" will do a real job for each individual dealer. Dealers participating insisted that the main effort be cooperative.

The newspaper through its representatives, as a third party in initial negotiations, can accomplish much by contact with dealers and the Utility Company. The newspaper can iron out, through its representative, minor difficulties and get a common ground of understanding without friction upsetting the "applecart."

The paper's representative can fill the important task of being an arbitration board—to edit all advertising copy and prevent controversial copy being injected into any dealer's copy or Gas Company's copy.

Newspaper Makes Harmony

In lining up this setup the newspaper's representative did much to insure harmony. It was possible for the paper to sound out dealers, to smooth any ruffled feathers and get enthusiasm for the program before it was launched. The paper kept dealers gas conscious until the first smashing advertisement was run, which brought in stove customers so fast that dealers were amazed and had their eyes opened to real volume that has been awaiting them.

The newspaper's circulation reaches the masses; it goes into the homes and insures reaching customers with the story of this plan quickly. Through this campaign it made possible doing a complete job at a reasonable aggregate advertising cost.

Newspaper Takes Initiative

In our program the Gas Company underwrites the cost of streamer headings at top and bottom of double spreads, while on full pages entire cost of the page is divided pro rata for all including the Gas Company. In double spreads each dealer pays for his actual space in the layout.

The newspaper should take the initiative. It can be the means of calling an initial get together and present the whole proposition. In the newspaper the dealer and Utility Company both have confidence.

Such details as arranging for uniform illustration of stoves in all the advertisements must be handled by someone with knowledge of requirements. Here the newspaper again serves an important task, in arranging for pictures, getting engravings of the proper sort made, and that matter of pictures cannot be overemphasized. After all, dominant picture interest gets a lot of the story across quickly to the reading public. It creates the need for good merchandise and makes housewives discontented with obsolete equipment. Line drawings and a conglomeration of manufacturers' mats should not be used in illustrating the cooperative ads. Uniformity is essential, and photos in smashing size will do a real job.

Too Good To Be True

Sales points of particular stove models must be hammered home in the dealer's individual copy, and every ad must contain understandable, simply worded explanation of details of what the consumer has to do to take advantage of the offer. Remember this plan sounds almost "too good to be true" from the consumer's standpoint, and assurance that the plan has no jokers to it must be stressed.

Dealers' Part

And now for the Dealers' part in this summary:

Attractive window displays to start off the campaign are important. Have each dealer put in a rental stove window display with adequate explanatory window cards emphasizing the $1.00 a month payment. Be sure to stress interior store displays in Stove Departments and in traffic centers of the store.

Explain To All Salespeople

For example, one department store had a display right at the entrance to the women's rest room, where women had to see the display. All the dealers used most valuable space possible for continuous displays, frequently changed, in their windows for two months.

Be sure that salespeople in all the stores of participating dealers have the proper understanding of the whole campaign. Avoid dirty competitive sales tactics on the part of salespeople. You'll find dirty tactics are not necessary with this program. After the setup is organized and dealers are set to go, arrange a meeting of the dealers' salespeople and let the newspaper, through its representative handling the campaign, present the story to the entire group, making certain every salesperson understands the whole picture and is given a plausible reason for this whole campaign—explain that it is cooperative, that it is done as a means of getting fine, efficient equipment installed to replace old, inefficient equipment. Stress that salespeople must use positive selling, selling the features of their stove rather than knocking the other stoves represented in this plan from other dealers. This must be done to prevent upsetting the whole program, which offers salespeople a real chance to make commissions.

Dealers Like Campaign

Discourage premiums with range and other special inducements by individual dealers, as this program is sufficiently appealing to carry the whole momentum and dangerous competitive tactics can be avoided.

Actual working of the plan shows that the little fellow can get business as well as the big ones. In fact one firm, nearly bankrupt, is doing so well it is making a comeback because of this gas range campaign.

Intensive Solicitation

The secret of this program's success is in intensive sales effort by salesmen making personal calls at houses. The community is combed from every side, the consuming public is bombarded with the big blasts of a cannonade, making them emphatically gas conscious and good equipment conscious.

In Cedar Rapids dealers conduct individual Cooking Schools as supplementary promotional effort in conjunction with this campaign. For these Cooking Schools more effort and energy than ever before is being put out by dealers to insure their success. These, too, have an important place in the general program, but I would suggest that they be held back from initial stages of the program, say until the second months as a means of injecting new elements of interest in the range selling campaign.

Conclusion

Now then, gentlemen, how does this progress compare with what is being done in some other cities?

In one city that I know of a Utility Company is taking a stove that actually costs $47.00 wholesale and selling it for $57.50 at $3.00 a month. That means, that Company is actually selling the stove at a loss of about $12.50, and is demoralizing the stove market of the entire community, as retailers cannot afford to

(Continued on page 64)

2 EASY STEPS
TO MORE ECONOMICAL DRY BOX PURIFICATION

1. READ THIS:

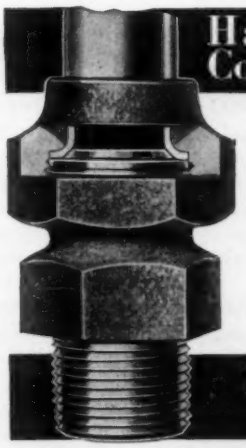
Lavino Granular Oxide (Standard Lavino Activated Oxide in a porous granular form) gives far greater purification for the dollar expended . . . increases the Box Capacity about 4 times . . . requires no mixing . . . is easier to handle and fill boxes . . . and allows fouled material to be sold for Sulphuric Acid manufacture.

LAVINO "GRANULAR" OXIDE

2. DO THIS:

Certainly these *proven* advantages and savings are worth investigation. Write for literature . . . or, better still, have one of our Purification Specialists call upon you. No obligation, of course.

E. J. LAVINO and COMPANY
1528 Walnut St., Phila., Pa.
Chicago Pittsburgh



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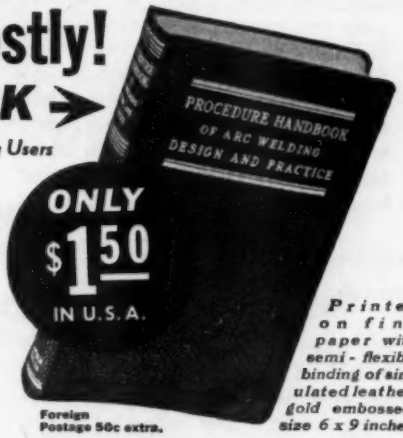

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Engineers and Contractors for Complete Gas Works

I-P C

Manufacturers of All Kinds of Gas Apparatus

NEWARK, NEW JERSEY

compete or attempt to vigorously push gas ranges on such a basis.

For that same stove model in Cedar Rapids the customer pays $89.00 without trade-in. The Sales Department shows a profit on its operation, the customer is satisfied, and it helps keep the stove market stepped up so that dealers can afford to push gas appliance sales and encourage sale of better merchandise.

Which plan do you think sensible to follow? Take your choice—and blessings on you!

Rehabilitating a Small Manufactured Gas Company

(Continued from page 13)

Where an automatic water heater is used, a 1c rate applies to this service. We have so often heard that electric inducement rates similar to the schedule applying in this territory should give us no worry of competition as few customers ever get into the lower bracket. To dispel this idea, we know as a result of our survey that an unusually large saturation of electric ranges and refrigerators had been placed during the past few years. Also, electric automatic water heaters were offered at a price of $35.00 installed, with payments at the rate of 50c per week. Therefore, even with a price of $18.90 on our heaters, we had a selling job on our hands.

Additional Revenue

We have made an analysis of 100 installations to determine what additional revenue we are averagely receiving through the sale of heaters at this price. The average additional gas used per heater is 18 M cubic feet per year with an increased revenue of $20.52. Figuring the cost items of selling and installation, we will be able to recover the investment in ten months' time. Taking into further consideration the increment cost of the additional gas, we are in a position to realize some net at the expiration of 14 months. A breakdown of cost items is shown in the accompanying chart.

In promoting this activity, we made effective use of a specially designed bill poster announcing the prices and terms. We developed interest in our newspaper ads each week by playing up the number of heaters sold during the week. This idea had the effect of a silent contest between various neighborhoods, streets and churches.

One of the most effective mediums of advertising we used was a four-page direct mail folder, picturing actual installations and testimonials from well-known customers. I believe this advertisement did more to dissipate false impressions and fear of high gas bills than anything we have used. When Mrs. Brown sees a picture of Mr. McGinsburg proudly watching his equipment—well, that's good enough for Mrs. Brown. It isn't long until the gossip swings over to a more favorable classification.

Cooking School

To stimulate further a gas consciousness in the minds of our customers, we conducted a three-day cooking school, tying in 29 dealers, representing all types of business, grocers, meat markets, hardware stores, and others. Each dealer gave an attractive prize at each daily session. Other outstanding activities of the school included: a meat-cutting demonstration by a local dealer, a style show sponsored by local merchants and an essay contest conducted for the advanced cooking class of the high school. We also offered two stoves for sale to the highest bidder and gave away a stove to the church showing the greatest percentage of women's membership in attendance throughout the three-day sessions. By conducting this school ourselves, quite naturally the cost was considerably more than the conventional cooperative idea. However, we felt by getting exclusive attention to our equipment we did more to awaken interest in gas service than any other activity we used this year and the cost more than compensated itself.

Reduces Production and Distribution Costs

Simultaneous with our intensive program for business development, we have been busily engaged in the improvement of the character of our service with resultant savings in production and distribution costs and elimination of some distribution problems. These problems claim as much importance as business development in our program of rehabilitation for business can be developed and recovered only in proportion to the degree of customer satisfaction compensated for itself.

In prospect and retrospect, we look upon the possibility of rehabilitating this company with a great deal more enthusiasm and hopefulness. The inroads the electric industry has made into our business is nothing to what we may expect were we to continue to employ programs based on "last year's results" or satisfaction with saturation in a measure with national averages. I feel that the life of the small gas company hangs in balance, and unless unusual devices are employed in the design to insure our future existence, we can expect gradual extinction. The progress we have made in Van Wert, coupled with a more favorable public acceptance awaiting our continued ready-to-go action, augurs well for further progress.

Why a National Advertising Campaign

(Continued from page 34)

not be predicated on the adoption of any company's or group's "pet" idea as to this or that detail, but rather on the adoption and support of whatever plan is evolved by the group to whom this responsibility is assigned.

This is a day of mass opinion which is forcing individualism out of the picture. We must realize that the present battle of fuels is between industries and that we must be prepared to fight as an industry. Just because an individual company is at present not faced with intense competition or does not see the necessity of presenting a solid front is no reason for its refusal to join this industry program. The old adage "United we stand, Divided we fall" is peculiarly applicable to the gas industry today and lack of full support by such a company in this coöperative project may be exceedingly regretted in perhaps the not-too-distant future. Let's be big enough and broad enough to believe that the resultant national advertising plan will be of such a character as to place the advantages of gas before the people of America in a manner which will gain for our industry the national prestige which it at present so sorely needs. Let's have faith in our ability to do the job. We are on the spot. We cannot afford to fail—we must not fail—and in my opinion gentlemen, we *will* not fail.

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NEW YORK
Oil Gas Plants—"Refractory Screen" Process for Base—Standby or Peak Loads—On Existing or New Water Gas Sets Low or High B.T.U. Gas

Domestic Gas Utilization

(Continued from page 20)

both light and strong as well as adaptable to modern metal working methods, ranges are being made available that are graceful in design, inexpensive in price and with the ability to "stand a lot of punishment." The fact that well designed steel doors are readily adjustable is a distinct feature. No salesman should imagine that the mere lightness of a steel stove, in contrast to cast iron construction, necessarily implies flimsiness—the secret of ruggedness in home-use lies in the design of the structural numbers, the accuracy of the die work, the method of joining and the durability of the protective enamel. Nevertheless many low grade stove makers resort to thin sheets [6] for panels, to underweight stamped framing, to unskilled metal workers, to poor grade but highly colored enamels, cheap burner cocks and oven regulators and other semi-fraudulent devices to deceive the credulous public. There is a point in original range investment below which a customer cannot go without uneconomical concessions to high operating costs. Skillful salesmen with knowledge of the facts can successfully combat the price competition of the "shot gun stuff."

(Continued in April issue)

[6] *In the trade the practice is common to refer to the thickness of metal sheets by the gauge number, as shown in the following:*

Number of gauge	*Thickness in decimal parts of inch*	*Weight per sq. ft. in pound*
3	.2451	10.0
5	.2145	8.75
8	.1685	6.875
10	.1379	5.625
12	.1072	4.375
14	.0766	3.125
16	.0613	2.50
18	.0490	2.00
19	.0429	1.75
20	.0368	1.50
21	.0337	1.375
22	.0306	1.25
23	.0276	1.125
24	.0245	1.00
25	.0214	.875
26	.0184	.75

In the stove business 18 gauge sheets are used for oven bottoms, whereas panelling may be 20 gauge on extra heavy stoves but 22 and 24 gauge is more commonly employed. The "shot gun stuff" is, of course, of the lighter weight variety which constitutes a less firm base for enamel, a most important consideration. Observe that a 26 gauge sheet weighs 0.75 lb. per sq. ft. as compared with a 22 gauge at 1.25 which is 2/3 heavier, hence, much more resistant to bending under the force of equal blows. The rigidity of the base metal is an important factor in determining the ability of an enamel to resist blows.

Leadership Campaign

(Continued from page 42)

carry the designation "honorable mention." In the campaigns hitherto, companies receiving "honorable mention" did not receive additional cash awards.

Awards offered by the Committee to individual salesmen are the same in all divisions, there being grand prizes for the nine men in each division who are ahead at the end of the campaign. The top men in each division will receive $100, the awards grading down to $20 for the ninth man. Additional awards of $10 each will go to the ten men who make the next highest sales.

Monthly awards will also go to all salesmen participating in the contest. A total of 720 monthly awards is offered.

Home Service Awards

For the first time, home service departments of gas companies will participate in the awards under the following conditions: Fifty dollars in cash will go to the home service department of each company that wins the "Sword of Merit," or that wins first place on installations per 10,000 meters.

As in previous campaigns, the awards are based on installations of Electrolux refrigerators, the contest having been planned by the Committee in collaboration with the Electrolux Refrigerator Sales Division of Servel, Inc. In working out the details of the campaign, the Committee had the assistance of H. S. Boyle, promotion manager of Servel, Inc., the aim of the Committee having been to have the campaign tie in with the promotional and advertising program of the Electrolux company, the largest in its history.

Regarding the Electrolux refrigerator, the Committee's announcement states: "Electrolux for 1936 enables you to offer your customers a gas refrigerator that is even more eye-appealing and buy-appealing than the one which won such overwhelming acceptance last year. It's truly the finest gas refrigerator ever built!

"It has all those famous operating advantages which already have won more than half a million friends for gas refrigeration . . . such things as no moving parts to wear, permanent silence, lasting efficiency, continued low operating cost.

"In beauty, too, Electrolux is years ahead. Its cabinet design—which American women themselves helped to create—remains the 'most beautiful of them all.' Besides, the interior of the new Electrolux has been simplified . . . organized . . . beautified. It's equipped with a wealth of new and improved conveniences . . . conveniences that will win the heart of any woman."

Urging the support of the campaign by all gas company members of the A.G.A., the announcement states: "The year 1936 can be a banner year for gas refrigeration if there are enough leaders in the gas industry to win our battle in the face of strong competitive selling. We have the product—an appliance that each year is winning wider and wider acceptance, an appliance that is superior on every important count to those offered in competition. We *have* the service—the most efficient, economical and dependable fuel in the world. 1936 will *prove* our leadership.

"The 1936 A.G.A. Refrigeration Contest will prove leadership among gas companies. It will prove leadership among the individual gas salesmen the country over. And so your Committee feels that nothing could be more fitting as a theme for our 1936 A.G.A. Refrigeration Contest than this of—Leadership."

Regulator Structures

Continued from page (23)

grade in the field. If the manhole is in the highway it is important to obtain the transverse slope of the roadway as well as the elevation. Where sidewalk areas are ten feet in width a slope of 2″ between the property line and curb is a common standard, conforming manhole frames to the slope eliminates a possible hazard from tripping because of differences between one edge of a frame and sidewalk. Data regarding slope of either roadways or sidewalks should be included in the design data and furnished to the construction crews for checking purposes.

When two or more manhole frames are used on a single pit the design frequently places one of the manholes directly above the regulator and the other at the ladder for the purpose of adding to both ventilation and illumination where most needed. The frame above the regulator may be placed slightly to one side and directly above the most common position of a workman when he is repairing or changing a regulator. An advantage of the offset location is that anything dropped through an open manhole would not be as likely to strike vital parts of equipment.

(To be continued in April Issue)

Above is shown a cast iron pipe installed 100 years ago in Boston's gas distribution system, and still in service. To add to cast iron pipe's long life would be superfluous so we have added to its efficiency by developing and perfecting a bottle-tight joint.

•

Stuffing-box type mechanical joints for use with cast iron pipe, as developed by C. I. P. R. A. members, are bottle-tight under all working pressures; proved so in field-performance and by tests in the laboratory of the A. G. A.

CAST IRON PIPE

THE STANDARD MATERIAL FOR DISTRIBUTION MAINS

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YOU owe it to your profits to thoroughly investigate the merits of Connelly Iron Sponge. Not only do tests show that it gives the highest Activity and Capacity, but in actual, practical use it has been found to be unsurpassed and the most economical.

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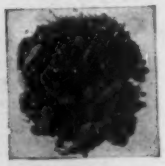
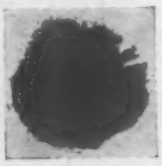
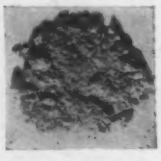
Why not look into the advantages of Connelly Purifying Materials today. Get in touch with our nearest office and obtain complete, convincing facts . . . without obligation.



Sample of CONNELLY FOULED SPONGE that had been in actual service through two foulings in the purifiers. Wt. 5.0 grams.



CONNELLY OXIDE which was in the 5 gram sample. Wt. 1.6 grams, containing 0.56 grams of Fe_2O_3.



Sulphur which 0.56 grams of CONNELLY Fe_2O_3 removed. Wt. 3.283 grams or 65% of the total weight of the sample.

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